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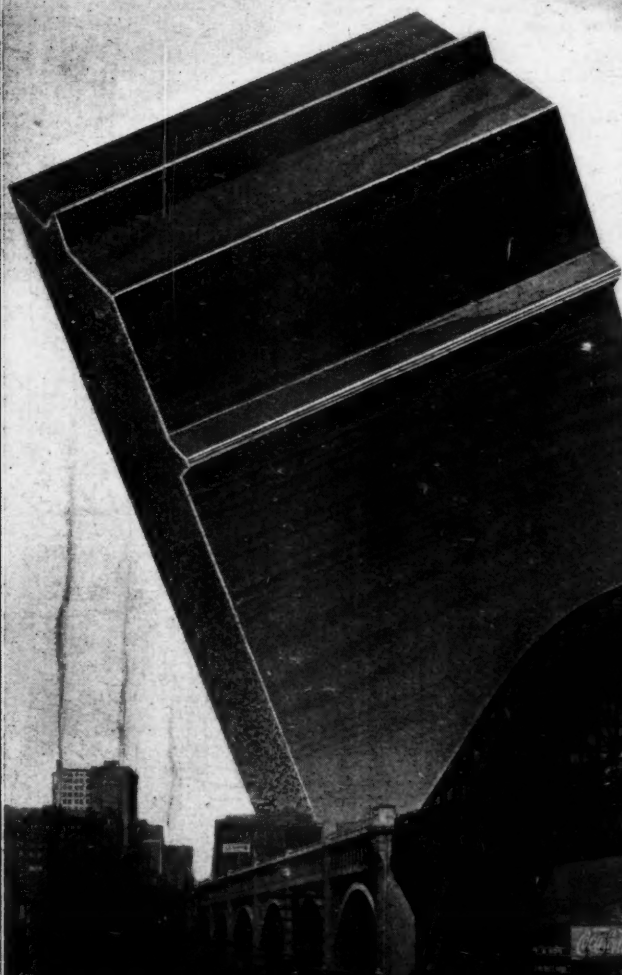
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# Municipal Journal

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No. 4

## IMPROVING SANITARY CONDITIONS AT LEAVENWORTH

Control of Health Activities in the Extra-Cantonment Zone Around Fort Leavenworth, Kansas, by the U. S. Public Health Service—Apparent Inadequacy of Water Purification Plant.

By J. G. WILSON\* and H. B. HOMMON.†

The city of Leavenworth, Kansas, is one of the larger communities situated near a large army camp where the health conditions were such as to demand the attention of the U. S. Public Health Service in order to protect the health of the officers and soldiers and the relatives and friends visiting them, and the civilian population working at the government institutions.

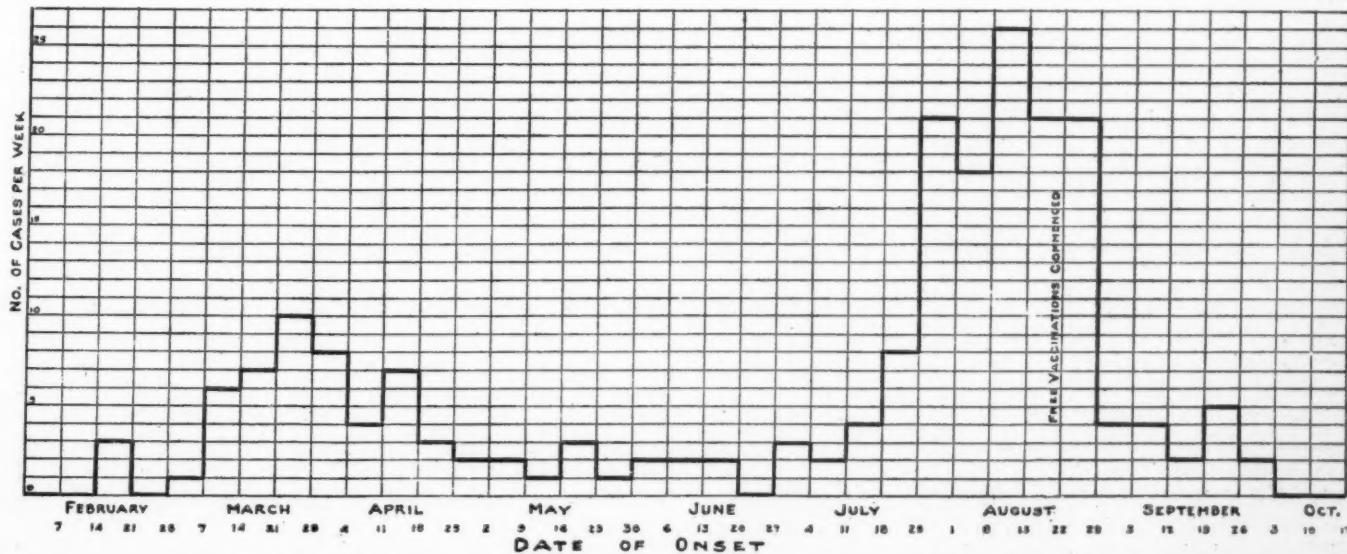
Leavenworth is situated along the west bank of the Missouri river and has a population of approximately 20,000. Adjacent to the city on the north is the government reservation on which are located Fort Leavenworth, the Disciplinary Barracks, and the Federal prison. The National Soldiers' Home lies to the south just beyond the city limits. The number of officers and enlisted men at the fort varies, but it is anticipated that there will soon be approximately 10,000 men there, and in addition there are about 1,500 at the Disciplinary Barracks. At the Federal Prison there are 1,600 men and at the Soldiers' Home approximately 2,000 inmates during the summer and 2,600 during the winter. The total population in and adjacent to Leavenworth is at the present time, or soon will be, approximately 35,000.

On February 14th, 1917, one case of typhoid fever was reported in the city of Leavenworth, and from this time on the number of cases reported varied, always one or more cases developing each week, until the week ending

August 1st, when 21 new cases developed. It was evident by this time that the epidemic was getting beyond control and the surgeon general of the U. S. Public Health Service was appealed to for assistance. Assistant surgeon J. G. Wilson, one of the writers of this paper, was ordered to Leavenworth on August 14th to study the situation, and assistant surgeon C. V. Aiken was ordered to proceed to Leavenworth with the interstate quarantine laboratory car "Wyman" on August 20th. Upon arrival at Leavenworth on August 16th, Dr. Wilson found that 26 cases of typhoid fever were reported for the week ending the 15th and that the situation demanded immediate and energetic attention. He was made City Health Officer without compensation on the 16th, and when the interstate laboratory car arrived, analyses of water from the city supply and the wells were made at once to learn whether the infection was contained in the city water.

The city water supply is obtained from the Missouri river about one mile above the city and above all the sewer outlets from the city, but only about one mile below the outlet from a septic tank receiving the sewage from 1,600 prisoners at the Disciplinary Barracks at the Fort. The raw water pumped from the river is treated with alum at a rate varying from 3 to 6 grains per gallon, depending upon the turbidity of the water, and allowed to settle in a primary settling basin about 1½ days and then again treated with alum at the rate of 3 to 6 grains per gallon and allowed to settle for approximately 1½

\*Assistant Surgeon, U. S. Public Health Service.  
†Sanitary Engineer, U. S. Public Health Service.



TYPHOID FEVER CASES IN LEAVENWORTH, KANSAS, FEBRUARY 1 TO OCTOBER 17, 1917.

days in two secondary basins. The water from the final settling basin is treated with liquid chlorine at a rate of approximately 0.44 p. p. m. The storage capacity is computed from the volume of the settling basins, and as operated, the actual detention period is probably much less than one-half the computed value.

The apparatus for applying the alum is very crude, there is only one chlorine gas machine, the emergency hypochlorite tanks are unserviceable, and there are no baffles in the settling basins to insure either a thorough mixing of the alum solution with the water, or a storage period comparable with the capacity of the basins. In fact one of the secondary basins has the inlet in the west wall near the middle and the outlet in the south wall near the west wall. Mud was allowed to accumulate in the primary basin until practically one-half of its capacity was not available. The alum devices consisted of cylinders that were charged with alum each hour and city water under pressure passed through the alum and into the water to be treated.

Dr. John J. Sippy, epidemiologist for the State Board of Health, had made a report on the typhoid fever situation in July in which it was stated that the milk supply was eliminated as the original source of infection and that the epidemic was probably started during the February flood stages of the river by insufficiently chlorinated water supplied by the City of Leavenworth & Ft. Leavenworth Water Co. The analyses made by assistant surgeon C. V. Aiken in the interstate laboratory car the latter part of August indicated that the city water supply was satisfactory at that time, but the physical condition of the plant was such as to arouse suspicion of its ability to produce pure water continuously. A report on the water situation, covering a few days' observation, had been made in August by sanitary engineer H. W. Streeter, U. S. Public Health Service, in which it was pointed out that, notwithstanding the fact that much favorable evidence was at hand regarding the quality of water furnished the city of Leavenworth, the equipment for treating the water at the pumping station seemed inadequate for the purpose, and before final judgment could be passed on the city water supply a daily examination should be made covering at least two months. The evidence referred to comprised the reports of the State Board of Health and the Kansas City Testing Laboratory, containing weekly analyses as far back as January 1, 1917, and a special report by Waldin Williams, chemist and bacteriologist for Kansas City, Kansas, containing daily analyses for August 9th to 28th, inclusive.

In the State Board of Health report, five samples were found in the weekly analyses from January 2d to October 22d that contained *B. coli* in at least one of the five 1-cc. samples analyzed. Over this period ten samples were reported as containing *B. coli* in the one 10-cc. portion analyzed in each sample submitted. The Kansas City Testing Laboratory only tested for *B. coli* in 1-cc. portions and they did not report the presence of *B. coli* in any of the samples from January 4th to August 25th. In Mr. Williams' report covering the period from August 9th to 28th inclusive, *B. coli* were indicated present in the 10-cc. portion tested in only one of the duplicate samples taken on three different days. No positive tests for *B. coli* were reported in any of the 1-cc. or 0.1-cc. portions analyzed.

The total number of bacteria per cc. determined on agar at 37°C. was below 100 in all the reports except on one or two occasions.

It should be stated, in considering the bacteriological evidence relating to the water, that at the Federal prison with a population of 1,600 men using the city water there was not one case of typhoid fever reported, although 75

per cent of the men were said to be within the susceptible age.

In view of the conflicting evidence regarding the purity of the city water and the fact that the equipment at the pumping station did not seem adequate for guaranteeing a bacterially pure water at all times, it seemed advisable to make a comprehensive study of the water supply, and H. B. Hommon, sanitary engineer, U. S. Public Health Service (one of the writers of this article) was detailed for this study.

If the evidence was not positive as to the cause of the typhoid fever epidemic, there was no reason for doubting the means by which it was being perpetuated. Wells of the open type were common all over the city; privy vaults, without protection from flies, and from which the liquids had all leaked out into the soil, were more common than open wells; open manure boxes were found in all the alleys; there was no effective ordinance controlling the production and distribution of the milk; and the handling of food products in general was unsatisfactory.

The organization of the health department consisted of a local doctor giving part time to the work, and one sanitary inspector. When the U. S. Public Health Service took over the city health office a campaign was started at once to raise sufficient funds to provide means of stopping the epidemic immediately and to make a survey of the sanitary conditions of the city. The county and city of Leavenworth together contributed \$5,000, the National Red Cross contributed \$13,000, and the U. S. Public Health Service added \$1,000 per month, all the money to be utilized at the discretion of the city health officer. In carrying out this work two main objects were kept in mind: first, to combat the present epidemic and to prevent the interstate spread of typhoid fever, and second, to clean up the city of Leavenworth and the towns in the county and effect a permanent health organization so as to promote the future health of the community and the soldiers at the Post.

The National Red Cross, through the Division of Sanitation of Extra-Cantonment Zones around Army Camps, sent three inspectors and three Red Cross nurses to assist the government in carrying out the program of stamping out typhoid fever in Leavenworth, and impressing upon the people of that city the necessity for maintaining an efficient health organization.

The first step taken to stop the typhoid fever epidemic was to vaccinate as many as possible of the residents over three years old and under 50. The vaccination was done free, and one week before the time set to begin, advertisements were placed in the local papers announcing the places where the vaccination would be given. The people responded in large numbers, and at the end of but a few days 5,000 had been vaccinated, the total number for the city being 5,266. In the rural districts 396 were vaccinated and at the State penitentiary and the Federal prison 565. The total number receiving the first dose was 6,227, there were 5,744 that came back for the second, and 5,277 received all three doses. The chart accompanying this article shows the number of cases per week from the beginning of the epidemic and also the date when free vaccination began. The time of onset is given for each case. It cannot be proven that the rapid falling off in the number of cases reported following the first vaccination was due to the vaccine, but the fact that only two new cases occurred in the city after October 3d to date (Dec. 18, 1917) is fairly good evidence that a high degree of immunity came from some source.

While the City Health Officer, assisted by local physicians and the Red Cross nurses, were vaccinating



the people, the milk inspector was drafting an effective milk ordinance and the chief sanitary inspector of the Red Cross, assisted by local inspectors, was making a house-to-house canvass to gather information relating to sanitary conditions in the city.

The cards carried by the sanitary inspectors called for the following information: first, whether the occupants used city, well, or cistern water; second, whether a privy vault was used and if so the type and sanitary condition of it; third, from whom the milk supply was obtained; fourth, the number of people that had typhoid fever or other diseases during the year; fifth, the age of all the members of the household and occupation of the adults; sixth, other miscellaneous data that would be valuable in forming an opinion as to the best health measures to adopt for preventing future epidemics of any kind.

The milk ordinance passed by the Board of Commissioners, after considerable opposition, required that the milk inspector visit all the dairies and issue permits to the owners when their equipment and method of handling the milk was pronounced satisfactory. It required that all cows be given the tuberculin test, it contained rigid requirements regarding the production and distribution of the milk, and the total bacterial count in the milk was not to exceed 300,000 per cc. The opposition that developed when the ordinance was first introduced gradually disappeared and in the end the dairymen were co-operating with the health department. In the average herd 2 to 3 per cent of the cows reacted to the tuberculin test, but in one herd 6 out of the 13 cattle gave a very decided reaction.\* When cattle give a positive reaction, the state law requires that they be appraised by a representative of the state and the owner and a third party selected by the first two, and the owner given one-half the appraised value. The state then ships the cattle to a packing house where there is a government inspector, and if the meat is not dangerously affected the cattle are sold for beef, the state receiving the money.

An ordinance relating to the construction and attention of privy vaults and sewer connections was passed. This ordinance specified the size of the vaults and required them to be water-tight and enclosed by a building in such manner as to prevent the access of flies, chickens, or small animals of any kind. It further provided that no privy vaults would be permitted where there were city water and sanitary sewers available in the streets or alleys. The total number of privy vaults in the city has not been tabulated, but up to December 15th there were 1,884 houses where notices to make sewer connections or construct new vaults were served. Considering that the city is not well supplied with either city water or sanitary sewers, the number of privy vaults where no sewer connections can be made will probably be more than 2,000. Some objections have been encountered in carrying out the provisions of this ordinance, but on the whole the conditions are being met within the time limit specified in the ordinance.

A laboratory was equipped out of the funds appropriated by the city and placed in charge of a bacteriologist from the Red Cross Unit. Daily analyses of the city water were made, a large number of wells were examined, and after September 4th the stools of typhoid fever patients were examined to decide when they ceased to be carriers. Also swab specimens from suspected diphtheria patients were examined at the laboratory and other miscellaneous work done to assist in the diagnosis of various diseases.

Approximately 100 wells were examined and of this number 75 per cent were badly contaminated. This was

\*775 cattle were tested; 23 were found to be tuberculous.

to be expected from the large number of poorly constructed privy vaults all over the city, and as this ratio would undoubtedly hold for the entire city, the well water was considered unsatisfactory as a whole and all families using wells or cisterns were continually advised through the local press to boil all the water drawn for drinking purposes, or any purpose whereby water from these sources would be taken into the system. The city water mains were not extended over a large enough area of the city to warrant the closing of all the contaminated wells.

The bacteriological results obtained from a daily examination of the city water during September and October indicated that the water on the average comes within the standard set by the Treasury Department for interstate carriers. There were times, however, during the period when daily tests were made, that the total count was as high as 800 bacteria per cc., and *B. coli* were found in more than one of the five 10-cc. portions tested. The poor results came at the time when a part of the settling basins was out of service for removing mud, and these results bore out the contention, referred to earlier in this paper, that the treatment plant is not adequate and is not operated so as to give a satisfactory water under all conditions of plant operation. The turbidity of the water furnished the city was never less than 10 p. p. m. during the period of the tests and often ran as high as 35 in normal operation and as high as 50 p. p. m. when a part of the settling basins was out of operation. The emergency recommendations made on the basis of the bacteriological results obtained, and the examination of the physical properties of the plant, were:

First.—An emergency liquid chlorine or hypochlorite apparatus should be installed and maintained in good working order to supplement the liquid chlorine machine now in use.

Second.—A modern apparatus in duplicate should be installed to regulate the amount of alum added to the water at each of the two points of application.

Third.—The amount of water pumped daily should be determined either by installing a meter or by rating the pumps by the amount of water drawn down in the secondary basins when the inlet to these basins is closed. This is necessary to regulate the alum and chlorine treatment.

Fourth.—Baffles should be arranged in front of the inlet to the first secondary basin to cause a thorough mixing of the alum with the water entering the basins.

Fifth.—The mud in the primary basin should be removed at once. Practically one-half the effective settling capacity is now filled with mud.

Sixth.—All the mud in the first secondary basin should be removed.

Seventh.—The reserve storage reservoir at Pilot Knob should be emptied and thoroughly cleaned.

Eighth.—A barbed or woven wire fence at least eight feet high should enclose Pilot Knob storage reservoir, with a fine-mesh chicken-wire fence, three feet high, around the bottom. The gate to this reservoir should be kept locked. The ground inside the fence should be seeded down with grass, the weeds cut, and a competent watchman engaged to guard the reservoir.

Ninth.—The laboratory at the office of the Water Company should be fully equipped for bacteriological work and the man in charge given ample opportunity to study and develop a routine procedure for making daily tests of the raw and treated water. He should also be given complete charge of the operation of the treatment plant.

Tenth.—The treatment plant should receive more attention, and when basins are taken out of service for removing the mud, etc., work should be carried on vigorously and without interruption until finished.

In view of the fact that the city has not been able to obtain adequate service from the water company, and that the emergency measures necessary to be made at once will cost considerable money, and that sand filtration will eventually be required, it was advised that the city initiate a movement at once to purchase the water plant and remodel it into a modern filtration plant. The water company is now filtering the water furnished the government for Fort Leavenworth except the Federal prison, and records of the Post laboratory show that the filtered water is of a high quality at all times.

The cause of the typhoid epidemic in Leavenworth can only be arrived at by the process of elimination, and even this method has its weak link. The outbreak occurred in February during flood stages of the river and at a time when typhoid fever existed in the cities and towns located on the river above Leavenworth. The treatment plant of the City of Leavenworth and Fort Leavenworth Water Company was found during September and October to have lapses in efficiency when large numbers of bacteria and *B. coli* were found in samples drawn from the city mains. This alone would be sufficient evidence to place the blame for the epidemic on the city water if it were not for the fact that at the Federal prison, where city water was used, there was not one case of typhoid reported among the 1,600 prisoners, 75 per cent of whom were within the susceptible age.

City water was, however, the only product of human consumption that was used by all the patients during the early stages of the epidemic, and knowing the type of treatment plant and the method of operation, all the evidence, except that noted above, points toward the city water as the original source of infection. While the samples analyzed during February, March and April did not indicate the water in the mains was contaminated to any great extent, it must be borne in mind that only weekly tests were made and that there was ample opportunity for insufficiently chlorinated water to get into the mains and be used up between the regular sampling dates. The epidemiological data eliminated all food products as the original source of infection as far as the first cases could be traced to any one source of supply of any one common food used by the patients during the early stages of the epidemic.

Summing up the situation at the extra-cantonment zone around Fort Leavenworth at the time when the U. S. Public Health Service took charge we have the following conditions existing at that time:

1. A serious typhoid fever epidemic was running at the rate of 26 new cases per week.
2. Poorly constructed and unprotected privy vaults were common all over the city.
3. Open manure boxes were in all the alleys.
4. Water from wells adjacent to the privy vaults was being used without boiling, all over the city.
5. The milk supply had no safeguards thrown about it and the sanitary conditions under which it was produced and distributed in many cases were very bad.
6. The purity of the city water supply, taken from the Missouri river, which is always badly contaminated, was under suspicion.
7. The health department consisted of a local physician giving part time, and one sanitary inspector. There was no laboratory for clinical diagnostic work and typhoid fever patients were released from quarantine whenever the temperature became normal.
8. Only a very small number of children and young people were vaccinated against smallpox. There were 15 cases of smallpox in October.
9. The sanitary conditions in many of the stores

handling foodstuffs and selling refreshments were very unsatisfactory.

The records of the health department up to December 15th will show that very satisfactory progress has been made in improving the sanitary conditions that were found when the Government took charge on August 16th. Through inoculation, quarantine of patients, public lectures and warnings through the local papers to boil all water and milk, the typhoid fever epidemic was broken up in six weeks. City ordinances were passed controlling the production and distribution of milk, and an ordinance covering the construction and attention of privy vaults and sewer connections was passed and put into force. Regulations to prevent the breeding of flies in manure were included in an ordinance covering the construction of manure boxes. A laboratory was established and typhoid fever patients were not released from quarantine until the stools were free of typhoid bacilli. Out of 85 typhoid cases, 58 patients were carriers for 10 days after the temperature became normal, the others varying from 12 to 64 days. A threatened smallpox epidemic was stopped by promptly vaccinating 94 per cent of the children in school and a large number of older people. In all, 2,727 vaccinations against smallpox were given, up to December 1st. A complete sanitary survey of the city was made and data obtained for drafting the ordinances relating to the handling of food products and refreshments in stores, restaurants and hotels; privy vaults; sewer connections; and the storage of manure. A daily examination of the city water was made for a period covering three months and an examination of the treatment plant made and a report prepared recommending that improvements be made at once to guarantee the best results that can be obtained with the present treatment plant, and that sand filtration be provided in the near future. The State Board of Health has authority to require that the recommendations relating to the water supply are carried out.

The health program laid out by the representatives of the U. S. Public Health Service for Leavenworth is only what should be provided for every city, and it is hoped that when the present emergency has passed the city will maintain a full time health officer, a well-equipped laboratory and enforce the ordinances recently passed that have been found practical in operation during the last two and one-half months.

### THE DAVENPORT SEWER INLET.

By ROSCOE E. SAWISTOWSKY.\*

The general topography of Davenport, Iowa, is rather hilly, with steep slopes, and the sewer inlet problem here is to get the water as it comes pouring down the long hills, and get it fast. To meet this condition we use an inlet that we consider the most efficient and practical one that has been designed. The size of the grate is 24" x 36", with 3.20 square feet of openings. The cross bars are at an angle of 60 degrees from the horizontal, which greatly increases the capacity of the grate, that being the unique feature of this design. The weight of the grate in grey iron casting is 257 pounds and that of the frame is 210 pounds.

The bottom walls and back are easily constructed of concrete. We have built some entirely of brick, but find that the ones constructed of concrete are cleaner and more sightly, besides being cheaper in construction.

The arched recess or opening at back of grate is necessary to receive the coarser material washed to the inlet. Our streets are cleaned by flushing with automatic flushing wagons. One man follows the flusher with a stiff broom, pushing the heavier material along with the

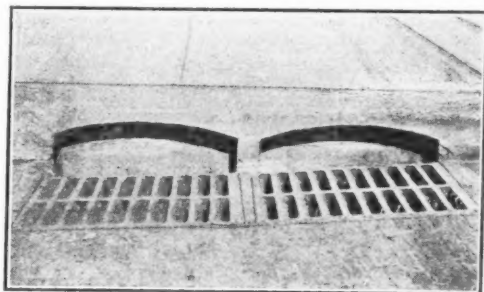
\*City engineer of Davenport, Iowa.



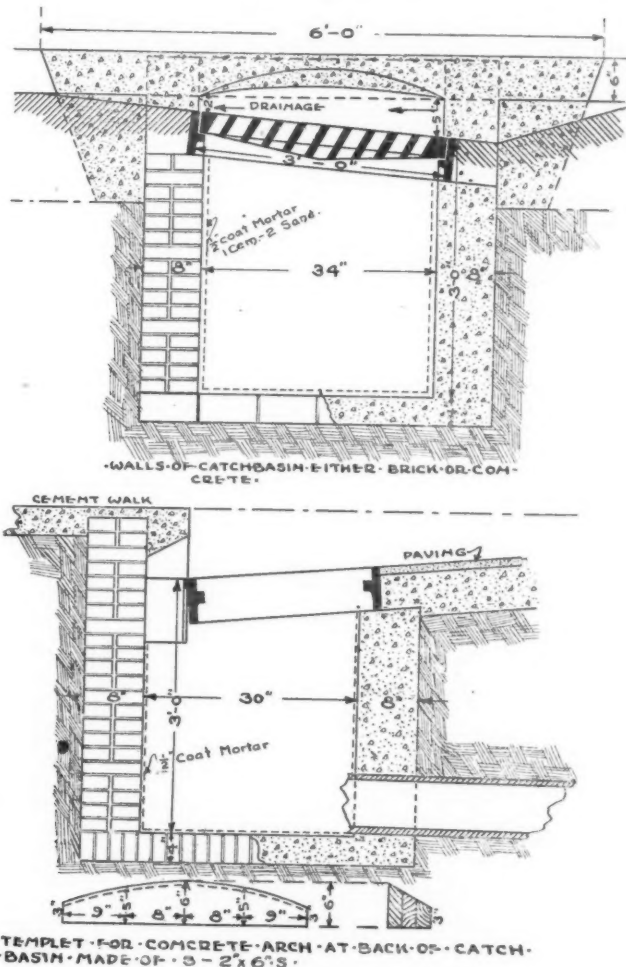
water to the basin and through this opening in the back of the curb.

We have had very little trouble with stoppage of inlets where the new ones have been installed, except in the autumn when the leaves from trees will stop up the openings in any grate, no matter what the design. When the grate is clogged with leaves, the water will flow through the opening in the back of the curb.

The cost of inlet, complete, is about \$20 when built by city forces. This, of course, does not include the laying of pipe to the inlet from the main sewer, which will depend upon length of pipe and size necessary.



DOUBLE INLET.



SECTIONS OF DAVENPORT INLET.

Drainage flows from right to left in the upper section.

### MOTOR TRUCKS AS FREIGHT BOAT FEEDERS.

A demonstration of the possibility of cooperation between motor trucks and boat lines for the improvement of transportation facilities has been given in the territory adjacent to Long Island Sound, according to reports that

have been received by the office of the chief of engineers of the War Department, and communicated to the Department of Commerce.

At New Haven, Conn., products are being received from interior points in that state by auto trucks which deliver goods at the dock of the Starin New Haven Line. Transportation is by water from that city to New York, and the following day the goods are loaded on a through car for their destination on the Lackawanna fast freight lines.

This new war-dispatch route eliminates the transfer car, and the use of car, engine, and floor space in freight house, and tends to consolidation and increased tonnage on the through car from New York to the destination. Among the places in Connecticut that are being put into direct communication with the Sound transportation facilities are Derby, Shelton, Ansonia, Seymour, Waterbury, New Britain, Meriden, Hartford, Middletown, and Wallingford.

### REDUCING CONCRETE MIXER GANG.

A new wrinkle in delivering concrete material to the mixer, intended to meet an expected shortage of labor, was used last summer by the Independent Asphalt Paving Company, of Seattle, in the work of laying concrete pavement on three and one-half miles of the Pacific Highway. The company anticipated that the expansion of the ship-building industry in Olympia and vicinity and the construction of the American Lake cantonment would make labor very scarce, and set their wits to work to reduce their concrete gang to a minimum.

The company had a number of automobile trucks, and it had the bodies of each of four of these separated into five compartments by four wooden partitions. Each partition was made with the top half fixed and the lower half hung from the upper by strap hinges and held in place at the bottom by a simple catch which could be released easily. The trucks were of three-yard capacity and were self-dumping. The idea was to place in each one of the five compartments the proportions and quantities of sand and gravel required for a single batch. On reaching the mixer, the truck would be backed up to a position for discharging directly into the hopper of the mixer. The body would be raised for dumping and the tail-board released, when one batch of material would drop into the hopper. When this had been mixed, the bottom half of the first partition would be released and the material from the second compartment would be discharged into the hopper; and in succession the other three compartments would be similarly discharged.

The sand and gravel were received by rail at a point approximately in the center of the work. At this point a stiff-leg derrick with a three-quarter-yard clam-shell bucket was used to lift the material directly from the cars to stock piles containing approximately 3,000 cu. yds. of gravel and 2,000 cu. yds. of sand. (No paving was started until this amount of material was on hand, in order that the concreting might be continuous after it had once been started.) Meantime, a small loading bunker was built, designed to hold about 5 cu. yds. of sand and 10 cu. yds. of gravel and equipped with 5 measuring boxes for sand and 5 for gravel so located in the bottom that they could all be discharged into the compartments of a truck-body without moving the truck. This bunker was filled by means of the stiff-leg derrick. The measuring boxes delivered into each compartment 6 cu. ft. of sand and 9 cu. ft. of gravel. Three sacks of cement were added to this at the mixer when the aggregate was dumped into the hopper.

Where the contractor had been in the habit of using twenty-two men on the mixer, he found that ten men did the work easily in connection with this plan of filling the hopper. In addition, no stone was lost by spilling onto the sub-grade and the concrete was entirely free of dirt shoveled up from the ground with the aggregate, which mixture of dirt is common when the wheel-barrow method is employed.

By actual timing it was found that each truck had to stand at the mixer an average of 9 or 10 minutes on each trip, or 25 per cent of the working time. A truck of this size can be rented for \$2.50 an hour. Four trucks were used to keep the mixer going and each was delayed 2 hours a day at the mixer, giving a cost of \$20 per day in delay of trucks by this method of filling the hopper. As labor cost \$3.25 a day and 12 men were saved, the saving in labor was \$40. In addition to this, there was a probable saving of material which would have been spilled onto the sub-grade. It was estimated that this method gave a net saving of about five cents a square yard in the cost of the paving.

### RESPONSIBILITY FOR FIRES.

In an address at the annual convention of the Illinois State Firemen's Association early in January, H. P. Wood, ex-mayor of Joliet, urgently recommended that action which many would consider drastic be taken in an effort to reduce the fire loss in the United States. Mr. Wood while mayor so improved the fire-fighting facilities of Joliet that the city was able to obtain a material reduction in its insurance rates.

The first recommendation was that of placing responsibility for fires, both moral and legal. The French law assumes that some one is responsible for every fire that occurs and endeavors to place that responsibility, generally upon either the tenant or the landlord. The tenant is held responsible unless he can prove that the fire originated from some cause beyond his control. If he does so, then the onus of proof reverts to the landlord, and the landlord may perhaps in turn pass it on to the builder; or each of them may be held to a partial responsibility for failure to notice or report infractions of the law by the others. Practically the same idea is embodied in the German law and practice.

The idea has found partial adoption in some cities of the United States, Mr. Wood citing the case of the New York Fire Department vs. the Universal Film Manufacturing Co., in which the Appellate Court held the company responsible on two accounts, one for failure to obey the order of the fire marshal to install sprinklers, the other holding it responsible to the city for the cost of putting out the fire. In Wisconsin, the local fire marshal is given considerable power and also extensive duties, being required to make at least four inspections of every mercantile and manufacturing building before his department is entitled to its 2 per cent of the insurance premiums.

Mr. Wood stated that in Illinois 85 per cent of the fires occur from negligence and therefore 85 per cent of the insurance premiums are unnecessary and wasteful. He considers it necessary to change our psychology concerning fire losses, and instead of sympathizing with persons who have a fire on their property, we should condemn them as subjecting the entire community to a tax in the form of increased insurance premiums and expenditures for water supply and fire departments which are rendered necessary by such negligence on the part of themselves and others. "There is no remedy so potent and no law so educative as that which places the blame for the injury which others receive through one person's

negligence or greed, and forces him to compensate those injured by his acts of omission or commission."

Another idea of modified psychology aims to place some of the responsibility for fires with the firemen. Instead of lauding the heroism of firemen who lose their lives, we should condemn the fire department as a whole for the existence of the conditions that made such loss of life possible. (This, we presume, applies only where the fire department is given complete authority to secure the carrying out of adequate building laws and other ordinances calculated to prevent fires.) "If 85 per cent of the fires are caused by negligence and are unnecessary, then obviously 85 per cent of the risk and liability to be injured which firemen undergo are unnecessary. Carrying the thought further, 85 per cent of the drain on your insurance fund is unnecessary. A United States soldier who unnecessarily exposes himself to injury or death is not complimented for bravery, he is court-martialed. It is not necessary that firemen should go on risking their lives putting out fires which the negligence or greed of some person has caused. Such a course would not be that of intelligently brave men. . . By eliminating unnecessary fires your risk would be lessened in proportion."

Mr. Wood, therefore, urged upon the firemen the realization that their greatest duty is not to risk their lives bravely in putting out fires but is rather to prevent them. If such prevention be intelligently and thoroughly carried out, the country could be saved a loss of one hundred and fifty million dollars a year, to be added to our other savings in the aid of the war fund.

### BABYLON'S WEIGHTY TRAFFIC ARGUMENT.

Babylon, N. Y., has had considerable difficulty with the overthrowing and breaking of traffic signs or "silent policemen" stationed in the roadways in place of the flesh-and-blood traffic policemen to direct traffic. Recently a sign in the center of the roadway intersection of two of the principal thoroughfares has been constructed in a way which is expected to be more permanent. A sign "Keep to the Right," is supported by a block of concrete about 2 feet square at the base and 1 foot at the top and about 5 feet high, thus probably weighing about 1,850 pounds. It is believed that any reckless automobile driver who runs into this standard will wish that he had not. There has been some opposition to this standard as being dangerous to traffic, but the village has spent more than \$75 replacing lanterns and other parts of the iron traffic sign at this point and felt that it was necessary for them to do something which would inspire in automobilists some respect for the "silent policemen."

### SHALL PUBLIC WORK CONTINUE?

The following letter was received too late to be included in our symposium January 5th, but the author's opinions are so clearly and concisely expressed that we think it should be added. Mr. Frederick W. Donnelly, mayor of Trenton, N. J., writes:

I wish to place myself on record as favoring the continuance of essential public improvements in municipalities, notwithstanding the condition of turmoil which exists today.

I do not believe that any unnecessary improvement that would involve huge expenditures should be authorized, but I am just as firmly convinced that every municipality should provide for its needs in the line of public improvements if the progress of the age is to be maintained. It is impossible for a municipality or any other government entity to stand still. Either progress or retrogression must be made, and, if essential public improvements are to be neglected, municipalities of course would go backward, not forward.

I do not believe that the prices of material or labor will show any general decrease for many years to come; consequently nothing will be gained by deferring improvements on such an assumption.



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## SATISFYING THE USERS.

The present generation has seen a change in the attitude of the public utility companies from the defiant one of "The public be damned" to that of "The public be pleased," and the motto of the successful business man no longer is "Let the purchaser beware," but rather "Every purchaser must be satisfied." Any business that is going to last over tomorrow must make today's purchasers permanent customers.

It is in keeping with this modern spirit that dealers in certain materials used in public works are concerning themselves as much in seeing that such materials give satisfaction as in promoting their use—or rather, are relying on satisfaction given as the best kind of promotion. To insure satisfaction, they endeavor not only to sell good materials, but also to see that the purchasers so use their goods that they render the best service possible—to prevent dissatisfaction due to unwise use and for which the character of their goods is in no wise responsible.

Manufacturers of paving brick, granite blocks, cement and yellow pine are among those that have organized to take this progressive stand. The help that they can give to engineers and municipal officials is referred to in the letter of an engineer that is published in this issue.\* As the author says, the fact that the ultimate motive of such associations is selfish does not detract from the value of the service they offer, for this service is of such a nature that it can benefit them only through the benefit it gives the users of their materials.

The intelligent selfishness of these manufacturers, if developed to its limit, might even be relied upon to a considerable extent in choosing between the several

\*As we go to press we find that this letter has been lost by the printer. It will appear next week if found.

classes of material offered. For use of a given material for a purpose or under conditions to which it is not suited is as liable to cause dissatisfaction to the user as improper use or poor material. The user is likely to condemn for this reason a material that is easily the best under other conditions, and this may prejudice him and others against the use of it for work for which it would be the most suitable material. None of the manufacturers' associations have yet developed to this point, however, and the user must discount their claims in making his selection.

We believe, however, that the wisdom of this further step in advance is being glimpsed by some of the leaders in this movement, and that the time is near when the most progressive manufacturers will admit that there are conditions for which their particular materials are not suitable. Many engineers still are suspicious of advice offered by manufacturers' associations as to the best methods of using their materials, because they have found unreliable some of the claims as to where such materials can be used advantageously. When the companies will frankly and intelligently set forth the conditions under which their respective materials can not be used to advantage, as well as those under which they can be so used, we believe they will have taken a long step toward securing the more complete confidence of consumers and the general satisfaction with their goods which will prove their best recommendation.

## LIFE CONSERVATION.

Every male between the ages of 18 and 31 is a possible soldier in this war, and every worker above the age of 16 is needed to a greater degree than ever before. The community has invested an average of \$200 or more in the education of each such individual. For these and other reasons it is interested in preserving the lives of its citizens from a strictly selfish or utilitarian point of view, and failure to do so is a waste of its most valuable resources. It takes twenty years to raise a man to take the place of each one who dies, and the necessity of the present world emergency will not wait.

Life conservation (including health conservation, which is but a variation of it) is the most important duty of American cities today.

How the Federal Government, through the Public Health Service, took active steps to conserve life in one city where conditions seemed to demand its attention, is told in the leading article in this issue. Other cities will do well to read carefully the health program laid out for Leavenworth and scrutinize their own conduct of such matters to learn whether it measures up to the high standard of health conservation that every community should set for itself in duty to the country at large as well as to its own citizens.

## FUEL CONSERVATION AND THIS ISSUE.

Readers may notice a scarcity of illustrations in this issue of Municipal Journal. This was caused by the fuel conservation order which, in closing industries from Friday to Tuesday, made it impossible for our engraver to prepare for us the cuts on which we had counted. This necessitated a revision of plans and deferring to later issues the articles that are to be illustrated.

We make this as an explanation to our readers, and not as a complaint against the order. The inconvenience was a small sacrifice to make if it assisted in the slightest degree in straightening out the congestion of war traffic that has resulted from the most severe winter weather ever recorded in the eastern United States, combined with the heaviest freight traffic our railroads have ever been called upon to carry.

## CITY PAYMENTS FOR FIRE PROTECTION

The report of the U. S. Census Bureau for the year 1916 dealing with the finances of cities gives for each city of more than 30,000 population the payments made for carrying on the fire department, the per cent which such expenditure is of all the expenditures of the city for that year, and the value of the property, including land, buildings, and equipment, employed for fire department purposes. These figures have been compiled in the accompanying tables. Table No. 1 gives, for each city, the population estimated as of the middle of the fiscal year 1916, the per capita payment for operation of the fire department, the percentage which this is of all expenses, and the total and per capita values of properties and equipment devoted to fire department purposes.

In another table is given a list of the cities which spent the most and those which spent the least for fire department purposes, arranged in the order of such per capita expenditures. A third gives the cities which show the highest and lowest percentages of such expenditures in comparison with the total expenditures of the city. A fourth gives a list of those cities which possessed the highest per capita and the lowest per capita values of

fire department property. Still another table gives the states in which are found cities of more than 30,000 population, arranged in the order of the per capita expenditures for fire department purposes of such cities, the amount given being in each case the average of the expenditures of all of the cities in the state of more than 30,000 population. It will be noted that in the second, third and fourth tables, the cities listed are almost entirely different in each. There appear in the lists of maximums the following duplicates: San Francisco, Brookline, Atlantic City, Springfield, Niagara Falls, Galveston, Macon, and Chattanooga, each appear in two tables. No city appears in all three. In the list of minimum expenditures, Wilmington, Chester, Perth Amboy and Harrisburg appear in two tables; while Bellingham, Newport and Norristown appear in all three. The figure of 2c per capita as the value of property in Wilmington, Del., seems to be impossibly low, but it is given as such in the census reports and repeated letters to the municipal department asking whether this is incorrect have brought no response.

Taking the averages of the entire 213 cities of more than 30,000 population, the census report gives the average value per capita of property and equipment as \$3.35; the average for cities of 500,000 or more being \$2.40, that for cities of 300,000 to 500,000 being \$5.62 (this average is largely affected by San Francisco's value, which is fully 6 times the average of the other cities of the group), that of the cities between 100,000 to 300,000 being \$3.67, that of the cities between 50,000 and 100,000 being \$3.54, and of the cities of 30,000 to 50,000, \$3.47.

The average expenses of all cities are given as \$1.65 for the entire country; \$1.57 for the group of largest cities, \$2.10 for the second group, \$1.71 for the third group, \$1.53 for the fourth group and \$1.44 for the fifth group.

Per Capita Value of Property and Equipment Used for Fire Department Purposes.  
(The highest and lowest.)

City	Amt.	City	Amt.
San Francisco	\$20.28	Decatur, Ill.	\$1.71
Springfield, Mass.	8.47	Bellingham, Wash.	1.65
Atlantic City, N. J.	8.43	Pueblo, Colo.	1.65
Stockton, Cal.	7.99	Huntington, W. Va.	1.61
Galveston, Tex.	7.03	Easton, Pa.	1.52
New Rochelle, N. Y.	6.93	Chicago, Ill.	1.52
San Diego, Cal.	6.92	Portsmouth, Va.	1.40
Brookline, Mass.	6.88	McKeesport, Pa.	1.39
Newtown, Mass.	6.74	Charlotte, N. C.	1.27
Mount Vernon, N. Y.	6.59	Chester, Pa.	1.07
Holyoke, Mass.	6.51	Norristown, Pa.	.97
Niagara Falls, N. Y.	6.34	Newport, Ky.	.82
Chattanooga, Tenn.	6.26	Wilmington, Del.	.02

Cities Arranged in the Order of Per Capita Expenditures.  
(The highest and lowest.)

City	Amt.	City	Per cent.
San Francisco	\$3.64	Danville, Ill.	20.8
Brookline, Mass.	3.55	Macon, Ga.	19.1
Atlantic City, N. J.	3.26	East St. Louis, Ill.	18.3
Springfield, Mass.	3.20	Terre Haute, Ind.	17.6
Niagara Falls, N. Y.	2.72	Omaha, Neb.	17.5
Portland, Me.	2.56	Pueblo, Colo.	17.3
Butte, Mont.	2.55	Knoxville, Tenn.	17.1
Seattle, Wash.	2.52	Manchester, N. H.	16.7
Hartford, Conn.	2.48	Woonsocket, R. I.	16.6
Boston, Mass.	2.47	Charleston, S. C.	16.4
Galveston, Tex.	2.44	Chattanooga, Tenn.	16.0
Buffalo, N. Y.	2.43	Superior, Wis.	15.9
Macon, Ga.	2.42	Birmingham, Ala.	15.8
Wilmington, N. Del.	.79	Covington, Ky.	15.8
Kenosha, Wis.	.77	New York, N. Y.	6.8
Chester, Pa.	.67	Newton, Mass.	6.5
Perth Amboy, N. J.	.65	Salt Lake, Utah.	6.4
Reading, Pa.	.65	Bellingham, Wash.	6.3
Lancaster, Pa.	.64	Pasadena, Cal.	6.3
Harrisburg, Pa.	.61	Pittsfield, Mass.	6.2
Bellingham, Wash.	.60	Perth Amboy, N. J.	6.1
York, Pa.	.59	Newport, Ky.	6.0
Winston-Salem, N. C.	.57	Norristown, Pa.	5.6
Newport, Ky.	.51	Harrisburg, Pa.	5.2
Norristown, Pa.	.32	Philadelphia, Pa.	4.5

States Arranged in the Order of the Per Capita Expenditures for Fire Purposes of the Cities of More Than 30,000

Name	Amt.	Name	Amt.
Maine	\$2.56	Texas	\$1.56
Montana	2.55	Illinois	1.55
New Hampshire	2.13	Arkansas	1.54
California	2.05	New Jersey	1.53
Oregon	1.98	Colorado	1.53
S. Carolina	1.87	Washington	1.49
Minnesota	1.83	Michigan	1.47
Georgia	1.82	Virginia	1.46
New York	1.82	Kansas	1.41
Nebraska	1.80	Iowa	1.36
Rhode Island	1.79	Alabama	1.34
Massachusetts	1.77	Kentucky	1.32
Florida	1.74	Idaho	1.31
Maryland	1.68	W. Virginia	1.30
Connecticut	1.67	Ohio	1.30
Indiana	1.66	Oklahoma	1.03
Tennessee	1.64	Utah	.99
Missouri	1.63	Pennsylvania	.94
Wisconsin	1.59	N. Carolina	.81
Louisiana	1.58	Delaware	.79

## PROPERTY AND EXPENDITURES FOR FIRE DEPARTMENT PURPOSES IN 1916

Compiled from reports of the U. S. Census Bureau.

State and City	Population in 1916	Per capita payments for expenses		Per cent of all expenses		Value of Property	
		Per capita	Per cent	Per capita	Per cent	Total	Per capita
Alabama:							
Birmingham	172,119	\$1.36	15.8	\$2.09		\$360,229	\$2.09
Mobile	56,295	1.23	14.0	4.58		257,500	4.58
Montgomery	42,903	1.43	15.1	4.55		196,426	4.55
Averages		\$1.34	15.1				\$3.74
Arkansas:							
Little Rock	55,158	\$1.54	15.0	\$3.29		\$181,326	\$3.29
California:							
Berkeley	56,266	1.84	11.1	3.35		188,670	3.35
Fresno	34,280	2.06	11.9	6.34		183,000	6.34
Los Angeles	489,589	1.82	7.1	2.84		1,390,648	2.84
Oakland	194,703	1.38	11.4	3.88		757,187	3.88
Pasadena	45,154	1.33	6.3	4.38		198,000	4.38
Sacramento	64,806	2.12	11.1	3.78		246,187	3.78
San Diego	51,115	2.37	8.4	6.92		354,030	6.92
San Francisco	459,762	3.64	15.0	20.28		9,330,000	20.28
San Jose	37,918	1.75	11.9	5.50		208,605	5.50
Stockton	34,508	1.57	8.2	7.99		276,750	7.99
Averages		\$2.05	10.2				\$6.43
Colorado:							
Colorado Springs	32,344	\$1.24	8.6	\$2.02		\$65,250	\$2.02
Denver	153,161	1.50	8.4	3.72		570,000	3.72
Pueblo	52,840	1.34	17.3	1.65		87,288	1.65
Averages		\$1.53	11.4				\$2.46
Connecticut:							
Bridgeport	119,220	\$1.94	12.7	\$4.57		\$545,916	\$4.57
Hartford	109,452	2.48	11.7	\$6.65		618,960	\$6.65
New Britain	52,601	.91	7.8	2.65		139,764	2.65



## PROPERTY AND EXPENDITURES FOR FIRE DEPARTMENT PURPOSES IN 1916 (Continued).

State and City	Population in 1916	Per capita payments for expenses	Value of Property		Per cent of all expenses	Per capita
			Total	Per capita		
<b>Connecticut (Continued).</b>						
New Haven .....	147,095	1.69	632,790	4.30	10.4	4.30
Waterbury .....	84,745	1.31	320,340	3.78	8.9	3.78
Averages .....		1.67		4.19	10.3	
<b>Delaware:</b>						
Wilmington .....	93,713	\$0.79	\$2,225	\$0.02	7.8	
<b>District of Columbia:</b>						
Washington .....	381,329	1.90	1,394,030	3.85	7.4	
<b>Florida:</b>						
Jacksonville .....	73,137	1.82	347,877	4.75	12.5	
Tampa .....	52,506	1.66	161,242	3.07	12.0	
Averages .....		1.74		3.91	12.25	
<b>Georgia:</b>						
Atlanta .....	184,873	\$1.48	\$729,404	\$3.94	10.9	
Augusta .....	49,848	1.59	180,800	3.62	10.8	
Macon .....	45,415	2.42	185,000	4.07	19.1	
Savannah .....	65,064	1.80	288,517	4.43	13.1	
Averages .....		1.82		4.01	13.45	
<b>Idaho:</b>						
Boise .....	32,443	\$1.31	\$128,425	\$3.95	10.6	
<b>Illinois:</b>						
Aurora .....	23,613	1.02	86,700	2.58	8.5	
Chicago .....	2,447,345	1.96	3,737,697	1.52	20.8	
Danville .....	31,560	2.95	110,400	3.47	20.5	
Decatur .....	28,961	2.98	107,000	1.71	18.3	
E. St. Louis .....	32,153	2.04	138,916	1.91	18.3	
Joliet .....	37,551	2.15	81,176	2.15	13.4	
Peoria .....	70,132	1.64	224,900	3.18	13.9	
Quincy .....	36,775	1.64	128,088	3.48	14.8	
Rockford .....	53,761	1.52	188,121	3.12	11.9	
Springfield .....	59,868	1.52	181,266	3.02	12.6	
Averages .....		1.55		2.61	12.55	
<b>Indiana:</b>						
Evansville .....	72,125	\$1.43	\$192,500	\$2.66	12.7	
Fort Wayne .....	74,852	1.45	219,250	2.94	12.2	
Indianapolis .....	265,578	2.16	1,019,760	3.83	11.9	
South Bend .....	67,030	1.07	156,120	2.32	10.3	
Terre Haute .....	64,806	2.20	201,330	3.10	17.6	
Averages .....		1.66		2.97	12.94	
<b>Iowa:</b>						
Cedar Rapids .....	36,764	\$1.18	\$85,254	\$2.31	7.4	
Council Bluffs .....	31,290	1.95	161,000	5.15	8.3	
Davenport .....	48,207	1.35	150,200	3.11	12.6	
Des Moines .....	93,757	2.33	438,591	4.94	13.5	
Dubuque .....	29,657	1.29	182,200	4.59	13.6	
Sioux City .....	55,960	1.35	167,800	2.99	8.1	
Waterloo .....	34,488	.85	881,300	2.56	8.3	
Averages .....		1.36		3.66	10.0	
<b>Kansas:</b>						
Kansas City .....	96,854	\$1.59	\$200,613	\$2.07	14.4	
Topeka .....	47,914	1.32	138,858	2.91	11.1	
Wichita .....	67,847	1.32	138,160	2.03	14.5	
Averages .....		1.41		2.34	13.33	
<b>Kentucky:</b>						
Covington .....	56,520	\$1.21	\$162,700	\$2.87	11.0	
Lexington .....	39,703	1.95	74,550	1.88	15.8	
Louisville .....	236,379	1.62	711,653	3.01	11.1	
Newport .....	31,722	.51	26,037	.82	6.0	
Averages .....		1.32		2.14	10.97	
<b>Louisiana:</b>						
New Orleans .....	386,484	\$1.46	\$1,295,000	\$3.53	10.6	
Shreveport .....	34,068	1.71	175,283	5.14	15.3	
Averages .....		1.58		4.33	12.95	
<b>Maine:</b>						
Portland .....	63,014	\$2.56	\$140,000	\$2.22	13.9	
<b>Maryland:</b>						
Baltimore .....	584,605	1.68	3,372,529	5.76	9.7	
<b>Massachusetts:</b>						
Boston .....	746,084	2.47	3,122,300	4.18	8.0	
Brookline .....	65,604	1.71	198,150	3.02	10.2	
Brookline .....	31,934	3.65	219,900	6.88	9.6	
Cambridge .....	111,997	1.44	363,891	3.24	7.3	
Chelsea .....	43,979	1.58	123,950	2.81	10.6	
Everett .....	38,307	1.33	136,036	3.55	8.4	
Fall River .....	126,904	1.36	493,294	3.88	9.1	
Fitchburg .....	41,091	1.88	171,963	4.18	10.1	
Haverhill .....	47,774	1.67	249,288	5.21	9.7	
Holyoke .....	63,968	2.29	416,581	6.51	13.7	
Lawrence .....	98,197	1.19	318,925	3.24	8.9	
Lowell .....	112,124	1.67	532,607	4.75	11.5	
Lynn .....	100,316	1.45	510,289	5.08	9.3	
Malden .....	50,067	1.32	165,500	3.30	8.2	
New Bedford .....	114,454	1.38	432,081	3.77	8.9	
Newton .....	43,085	1.87	291,700	6.74	6.5	
Pittsfield .....	37,580	1.05	138,000	3.67	6.2	
Quincy .....	37,251	1.75	148,610	3.98	9.8	
Salem .....	47,778	1.50	157,775	3.30	8.6	
Somerville .....	85,460	1.37	501,700	5.87	12.9	
Springfield .....	102,989	3.20	874,250	8.47	10.8	
Taunton .....	35,930	1.58	219,500	6.10	7.8	
Waltham .....	30,166	1.32	110,352	3.65	8.7	
Worcester .....	160,291	1.77	685,756	4.27	9.35	
Averages .....		1.77		4.53		
<b>Michigan:</b>						
Bay City .....	47,718	\$1.25	\$169,097	\$3.54	11.0	
Detroit .....	592,250	2.04	2,474,846	4.39	9.6	
Flint .....	122,594	1.17	85,940	1.71	12.7	
Grand Rapids .....	126,332	1.85	450,428	3.76	10.5	
Jackson .....	37,730	1.37	145,450	4.05	10.6	
Kalamazoo .....	47,744	1.32	94,750	1.90	12.6	
Lansing .....	39,403	1.63	118,646	3.003	15.1	
Saginaw .....	55,228	1.06	143,183	2.59	8.7	
Averages .....		1.47		3.12	11.60	
<b>Minnesota:</b>						
Duluth .....	91,913	\$2.00	\$280,796	\$3.43	13.8	
Minneapolis .....	353,460	1.57	1,214,376	3.43	8.5	
St. Paul .....	241,999	1.93	830,000	3.38	12.9	
Averages .....		1.83		4.28	11.73	
<b>Missouri:</b>						
Joplin .....	33,124	\$1.53	\$59,300	\$1.79	12.6	
Kansas City .....	22,615	1.79	54,278	1.85	9.8	
St. Joseph .....	34,263	1.70	923,406	2.64	18.0	
St. Louis .....	76,183	1.60	1,567,389	2.77	8.3	
Springfield .....	39,927	1.54	145,500	3.59	15.3	
Averages .....		1.63		3.47	12.20	
<b>Montana:</b>						
Butte .....	43,004	\$2.55	\$119,500	\$2.77	13.1	
<b>Nebraska:</b>						
Lincoln .....	45,900	\$1.10	\$87,000	\$1.89	7.5	
Omaha .....	163,200	2.50	525,489	3.21	17.5	
Averages .....		1.80		2.55	12.50	
<b>New Hampshire:</b>						
Manchester .....	76,959	\$2.13	\$428,203	\$5.56	16.7	
<b>New Jersey:</b>						
Atlantic City .....	55,806	\$3.26	\$472,000	\$8.45	12.6	
Bayonne .....	68,352	1.51	153,498	2.34	9.7	
Camden .....	104,349	1.42	325,000	3.11	10.7	
East Orange .....	41,155	1.42	171,473	4.16	7.4	
Elizabeth .....	85,620	1.32	333,069	3.89	11.2	
Hoboken .....	76,483	1.89	304,555	3.98	11.6	
Jersey City .....	299,615	1.60	625,010	2.08	11.2	

## PROPERTY AND EXPENDITURES FOR FIRE DEPARTMENT PURPOSES IN 1916 (Continued).

State and City (Continued)	Population in 1916	Per capita payments for expenses	Value of Property		Per cent of all expenses	Per capita payments for expenses	Value of Property		Per cent of all expenses	Per capita payments for expenses
			Total	Per capita			Total	Per capita		
<b>New Jersey (Continued)</b>										
Newark	399,000	1.74	1,428,274	3.57	7.5	0.65	358,025	7.2	7.2	0.65
Orange	32,524	1.36	83,876	2.54	9.6	1.03	219,041	1.93	9.6	1.03
Passaic	70,377	1.06	211,847	3.01	9.6	0.97	111,685	3.24	8.3	0.97
Paterson	137,408	1.72	396,231	2.88	14.7	1.14	107,185	3.20	10.6	1.14
Perth Amboy	39,725	0.65	97,634	2.45	6.1	0.59	209,190	4.13	7.8	0.59
Trenton	109,602	1.51	317,224	2.89	11.2	0.94			8.70	0.94
West Hoboken	41,893	0.96	65,100	1.31	10.1					
Averages		\$1.53			10.23		\$226,646			\$3.89
<b>New York</b>										
Albany	103,580	\$2.41	\$592,416	\$5.71	13.9	\$1.79	\$110,449	11.5	11.5	\$1.79
Amsterdam	36,183	1.07	108,435	2.99	11.3	1.81	111,800	2.57	16.6	1.81
Auburn	37,168	1.74	115,700	3.11	11.8					
Binghamton	53,082	1.43	210,000	3.95	10.2					
Buffalo	464,946	2.43	1,550,832	3.45	10.2		\$174,585	16.4	16.4	
Elmira	37,768	1.37	132,325	2.98	11.9		160,000	14.0	14.0	
Jamestown	35,871	1.37	132,325	2.98	11.9					
Mount Vernon	36,355	1.96	239,692	6.59	7.7					
New Rochelle	36,322	1.59	231,950	6.93	7.7					
New York	5,468,190	2.73	10,282,847	1.87	6.8		\$364,550	16.0	16.0	
Niagara Falls	36,240	2.12	230,996	6.34	14.4		216,512	17.1	17.1	
Rochester	250,747	2.12	1,107,390	4.41	10.5		814,077	10.8	10.8	
Schenectady	95,265	1.25	345,500	3.66	8.5		367,495	10.6	10.6	
Syracuse	152,534	1.64	679,000	4.45	9.7					
Troy	77,738	1.37	454,478	5.35	8.3					
Utica	77,738	2.18	389,819	4.40	15.4					
Yonkers	96,610	2.38	357,000	3.69	10.1					
Averages		\$1.82			10.46		\$390	7.6	7.6	
<b>North Carolina</b>										
Charlotte	39,199	\$1.05	\$50,000	\$1.27	13.2		\$133,000	11.4	11.4	
Winston-Salem	30,448	0.57	79,350	2.60	7.4		673,808	5.55	5.55	
Averages		\$0.81			10.30		172,124	2.83	2.83	
<b>Ohio</b>										
Akron	82,958	\$1.25	\$352,000	\$4.24	9.1		\$107,000	7.0	7.0	
Canton	59,139	1.12	152,446	2.57	10.3		244,175	2.15	2.15	
Cincinnati	406,706	1.97	2,150,230	5.28	8.2					
Cleveland	657,311	1.37	1,707,014	2.59	7.4					
Columbus	209,722	1.63	779,323	3.71	10.9					
Dayton	125,509	1.30	545,773	4.34	9.4					
Hamilton	39,655	1.10	149,563	3.77	11.4					
Lima	36,644	1.09	69,144	1.88	12.6					
Lorain	35,662	1.09	160,300	4.49	10.5					
Springfield	50,804	1.00	205,300	4.04	8.5					
Toledo	187,840	1.64	680,000	3.61	11.9					
Youngstown	104,489	1.13	366,888	3.51	9.7					
Zanesville	30,406	1.19	75,000	2.46	12.4					
Averages		\$1.30			10.18					
<b>Oklahoma</b>										
Muskogee	42,740	\$0.93	\$108,000	\$2.52	12.3		\$52,466	6.3	6.3	
Oklahoma City	90,620	1.13	347,703	3.83	12.3		70,355	2.08	2.08	
Averages		\$1.03			12.55		1,676,691	5.06	5.06	
<b>Oregon</b>										
Portland	271,314	\$1.98	\$1,196,210	\$4.40	13.3		423,204	2.95	2.95	
Averages							449,351	4.15	4.15	
<b>Pennsylvania</b>										
Allentown	61,914	\$0.89	\$293,268	\$4.73	9.8		\$72,200	11.8	11.8	
Altoona	57,606	1.10	123,500	2.14	11.8		188,318	14.4	14.4	
Chester	40,935	0.67	43,900	1.07	7.5					
Easton	30,206	1.07	46,100	1.52	10.3					
Erie	73,810	1.55	270,757	3.66	13.5					
Harrisburg	70,754	0.61	168,585	2.38	5.2					
Harrisburg	66,601	1.15	208,650	3.10	11.9					
Johnstown	50,512	0.64	108,500	2.14	8.0					
Lancaster	46,749	0.95	65,185	1.39	8.5					
McKeesport	40,351	0.87	76,671	1.99	8.3					
New Castle	40,351	0.87	76,671	1.99	8.3					
Norristown	30,832	0.82	30,000	0.97	4.5					
Philadelphia	1,683,684	0.86	3,212,609	1.90	4.5					
Pittsburgh	571,984	1.93	2,639,833	4.61	8.2					



## The WEEK'S NEWS

**Iowa Counties Cooperate to Lower Cost of Highway Materials—The Government's Truck Transportation System—Court Decides Against Luten Bridge Patents—Systems to Mitigate Electrolysis in Trenton—Chicago's and San Antonio's Police Chiefs Found Not Guilty of Charges—Dallas Firemen Strike—Fires in Marlinton, W. Va.; New York City, and Middletown, Conn.—Mayor Gill of Seattle in Trouble Again—City Manager Affairs in Middletown, O.; Grove City, Pa.; Xenia, O., and Ocala, Fla.—Oshkosh Wants Municipal Fuel and Ice.**

### ROADS AND PAVEMENTS

#### Cooperative Buying for County Highway Work.

Des Moines, Ia.—County boards are asked to proceed with the necessary road and bridge improvements in a wise and conservative manner in 1918, regardless of the abnormal conditions growing out of the war, according to advice given by the executive committee of the county supervisors' association of Iowa in a resolution adopted at a recent meeting. The system of cooperative buying for county highway construction has been inaugurated. A member from each congressional district makes up the executive committee, authorized at the last convention in Waterloo. These eleven men asked for bids on bulk orders of lumber, cement, piling and reinforcing steel to be used by all the counties in 1918 in their road and bridge improvements. The purpose is to secure a lower price and prompter shipments. The committee barred no one from the bidding, whether he be a large or a small dealer. The only condition was that the bidder designate the amounts of material which he can furnish at the price bid. It is also ruled that the operation of the bid shall be confined to the county or counties the bidder may designate. This plan of buying materials in large quantities, in order to secure a lower price, was highly commended by governor W. L. Harding. Estimates secured from counties show that approximately 14,000,000 feet, board measure, of rough bridge timbers, 480,000 lineal feet of piling, 75,000 barrels of cement and approximately 4,300,000 pounds of reinforcing steel will be wanted by the counties. Contracts for the material are to be made direct by each county board with the firms submitting the low bids on the entire supply. The firm is expected to ship to each county as orders are sent in from the county. "All bids will be subject to acceptance within thirty days and contracts for material will be made direct with each county board that wishes to take advantage of the prices secured," declares the advertisement of the executive committee of the association. "The quality of the material is to be in accordance with the standard specifications of the state highway commission."

#### Government Inaugurates Truck Train Schedule.

Washington, D. C.—The war department has formally announced the successful completion of the trip from Detroit to the Atlantic seaboard of the first United States quartermaster motor-truck train. These trucks will soon be sent to France, and their drivers, who were comparatively inexperienced at the outset of the journey across the states, are now regarded as capable of operating trucks in the war zone. As a result of the success of the trial trip it is announced by the quartermaster department that, beginning January 10 and continuing for six week days, truck trains started each day from Detroit for the seaboard. The test movement was one of railroad relief as well as a try-out of the trucks making the journey. Each truck brought two tons of supplies and saved its own haulage on the railroads. A freight car will accommodate but two trucks. A greater utilization of the highways for freight traffic is forecast by the success of the Detroit-to-seaboard trip. The quartermaster department is planning to bring thousand of trucks on their own wheels to the Atlantic coast, thereby relieving to an extent the freight congestion. The laying out of other military routes for the movement of trucks and supplies may result.

A further use of highways is forecast by a recent state-

ment of the postoffice department: "Within, perhaps, the next three months motor trucks parcel-post routes will be in operation in various parts of the country aggregating between 3,000 and 4,000 miles. One chain of motor routes will extend from Portland, Me., to New Orleans. Another will cover much of a large stretch of territory in Ohio, Indiana, Illinois and West Virginia. On the Pacific coast routes will be established between San Francisco and Sacramento, Cal., via Stockton and Fruitdale, a distance of 125 miles, and between Redlands and Los Angeles, Cal., via Ontario and Pomona, Cal., a distance of 76 miles. It is the belief of the post office department that the operation of these routes and others to be established will materially aid in the distribution and in lowering the cost of food products. The existing law does not provide for the employment of government owned motor trucks on rural delivery routes, nor does it require the rural carriers to use motor vehicles. In the star-route service, however, where the mail is carried under contract, a recent law permits the post office department to designate the sort of vehicles to be employed, and in awarding new contracts the department will specify that motor trucks shall be employed on all routes where the roads are such as to admit of their use. These contracts are advertised for bidders, and where payment asked for the service is deemed to be excessive the department is authorized to provide government-owned motor trucks and to employ drivers for the operation of these routes. A further extension of the employment of government owned motor vehicles by its adoption for the parcel post service of the rural routes will be made whenever Congress enacts a law now pending for that purpose.

#### Luten Bridge Patents Held Invalid.

Des Moines, Ia.—United States district judge Martin J. Wade has dismissed the complaint of Daniel B. Luten against J. B. Marsh, et al., by which the plaintiff sought to establish a right to 10 per cent royalties on the contract price of a large proportion of the concrete bridge and culvert construction which has taken place in Iowa during the past twelve or thirteen years. Quoting the maxim that "he who comes into equity must have clean hands," the court intimated that the plaintiff's methods "in the business of constructing bridges or getting the business of designing bridges" had been such that it was a question whether he should not be denied because his methods had been such as "no court can approve." The court however, based its decision upon the ground that the patents in question were not valid and that they were based upon methods of construction which were in common use by contractors and builders in many cases for years before the plaintiff had applied for his patents. Ten miniature replicas of bridges in various states of the union were received as exhibits for the defendants for the purpose of proving their contention that the plaintiff's inventions were nothing more nor less than ordinary methods of construction long in common use by builders of concrete bridges and culverts. The plaintiff asked for \$2,000,000 to cover the value of royalties alleged to be already earned and unpaid and for an adjudication which would establish a legal right on his part to collect several million dollars more during the life of his patents. He has already collected large sums as royalties in various parts of the country and substantial sums have been paid to him in Polk county and other parts of Iowa. The state highway commission is entitled to the credit for beginning the fight

against Luten's demands. On the basis of an opinion, which held in effect that Luten's patents were invalid, the highway commission refused to consider the plaintiff's demands when planning bridge construction work for the state. Although the state of Iowa was not a party of record to the suit as originally brought, the governor, under a special statute passed in 1913, which empowered the state, at the discretion of the governor, to come in and defend in any suit in which the public interest was concerned, directed attorney general Havner to look out for the state's interest. The plaintiff predicated his claim for an accounting and the payment of future royalties on 150 specific cases of alleged infringement of his patents in the state of Iowa. During the progress of the case the issues became narrowed down to twelve specific violations of the plaintiff's patent rights, principally due to the fact that the plaintiff withdrew four of his patents from the case. Judge Wade's verdict covered the other four of the eight patents. Judgment was granted against the plaintiff for costs. Judge Wade observed in his decision Luten has not been in the habit of perfecting his appeals, although he has entered notice of appeal in a number of cases. The attorneys for the defendants claim that Luten does not care to obtain the final decision of an appellate court. Judge Wade severely criticised Luten for bringing into the case as precedents, decisions which had been entered by consent of the parties in other jurisdictions in which he had brought suit. Judge Wade observed: "In view of the disclosures of this case, congress ought to pass a law providing that the attorney general or some one else might institute a proceeding testing the validity of the patent, settling the rights of the parties on both sides." Decisions adverse to Luten have already been rendered in Nebraska, Colorado, Kansas, Illinois, and Ohio, notwithstanding the fact that he has collected claims for royalties or infringements from many sources.

In the case of the patent, No. 851,970, which covers the paving of the bottom of the waterway under a bridge with a layer of concrete having a depressed end, Judge Wade denies the validity, stating that the practice was not new, and that no inventive genius was involved in varying the details of the method of paving. Other claims in this patent were concerned with extending the spandrels and wing walls to a distance and height sufficient to hold the earth fill from escaping at the ends of the spandrels. Judge Wade stated that while he could not determine the particular things claimed as invention there was no patentable novelty in the idea.

In considering patent No. 853,202, which covers the principle of providing tension members over the extended wall of an abutment to strengthen the structure at that point, Judge Wade decided that no variation in methods of reinforcement is patentable, since placing of reinforcing, he stated, is a problem of computation and part of the work of any skilled engineer. The same considerations entered into the decision on patent No. 853,203, which covers a method of reinforcing a concrete arch. While the decision admitted that there might be some invention in this patent it said that the claim referred only to the particular arrangement of the steel designated in the claims, and the bridge under review did not infringe on this arrangement.

In the case of patent No. 934,411 an improvement was claimed in the art of building a concrete wall up to a proposed line of projecting coping, allowing it to harden and then aligning the forms for the coping and completing it. Judge Wade decided that there was nothing patentable in this.

#### **Celebrate Completion of Pacific Highway Link.**

Seattle, Wash.—With appropriate speeches from county and city officials and engineers, and an opening ceremony by state highway commissioner James Allen, the citizens of this section celebrated the completion of the Duwamish-Renton Junction pavement, the final link in the all-paved highway from Seattle to Tacoma. There is now a continuous hard-surface pavement from a point north of Marysville to the Nisqually river, north of Tacoma. In reply to a challenge from Claude C. Ramsay, chairman of the King county commissioners, "I would like to have Samuel J. Humes, county engineer, tell us whether this road is honestly built," Mr. Humes replied: "In this three-mile stretch you will find every inch of pavement that the specifications call for. If you don't believe this, dig the road up at any place at my expense and test it. And hereafter every contractor for King county work is going to put in every inch that the specifications call for." "Because of inefficiency or dishonesty, the taxpayers haven't always got what they paid for," Mr. Ramsay had said.

#### **Road Patrol System in Effect.**

Salem, Ore.—With the abolition of the county road supervising system the new patrol system of keeping up the highways is in effect. The new plan, enacted by the legislature, provides for district patrolmen, who are to inspect the roads in their respective districts at all times of the year, and upon the discovery of any bad places therein are required to report the fact immediately to the county officials. In many instances the former road supervisors will be named to act in this capacity, but when necessary, other appointments will be made and allotments of territory given until the highways throughout the county are under proper supervision.

#### **Paving by Car Company When City Orders.**

Vincennes, Ind.—Where a street railroad operates under a franchise which requires it to pave a part of the street it can be mandated to construct the pavements ordered by the city. This has been established by the Indiana supreme court in reversing the Daviess circuit court for sustaining a demurrer to the complaint of the city of Vincennes on relation of the state against the Vincennes Traction Company to order the company to construct the paving between its rails and two feet on each side of the rails, as is required to be done by its charter. The court holds that where the company accepts a franchise which requires it to construct such paving it cannot question the wisdom of the city in ordering the street paved, as the power to decide the time and the manner of paving rests with the city authorities.

### **WATER SUPPLY**

#### **Build Pumping Station on Quicksands..**

Evansville, Ind.—After a two-year fight with quicksands and other adverse conditions the Public Utilities company's new pumping station is complete. The pumping station represents an expenditure of approximately \$150,000. It will pump all the water used by the Public Utilities company here. Two pumps, each handling 7,500 gallons of water a minute, are installed in the bottom of the well to pump the water supply, and there is room for two more whenever the needs of the company demand them. George E. Sloats, superintendent of the Public Utilities company's power plant, was in charge of the construction of the well. He says the chief difficulty met was with quicksands, which threatened the lives of workmen and destruction of the work continually. The well is fifty-six feet deep. At the bottom is a very thick floor, reinforced with steel rails. The entire structure is of reinforced concrete, with the exception of the ornamental tower at street level. This tower is erected of brick and is in the shape of a medieval battle turret. One of the pumps in the well is sufficient at present to supply the company's water needs. The other will be used as a reserve.

#### **New City Filtration Plant in Operation.**

Oshkosh, Wis.—The city's new filtration plant has been completed, and is now in operation. The cost of the building is approximately \$185,000. The new submerged crib and intake, made necessary for the operation of the plant, cost approximately \$35,300, and the required sewer through Menominee park entailed an outlay of nearly \$3,600. The contract price of the filtration structure was \$55,500, that of the appliances and accessories was \$40,000, for the elevated steel tank, \$7,950, and for the cover to the reservoir, \$11,800. Another big item was the masonry enclosure, which cost \$14,030. The tower involved an outlay of \$1,200, and the clock located therein represents \$500 more. Col. Henry A. Allen of Chicago designed the plant, furnished all the plans and specifications, and has been the city's consulting engineer throughout the period of its construction, which was started in April, 1916. Personal supervision of the work has been given by T. B. Jorgensen, Colonel Allen's resident engineer. Colonel Allen's fee for the entire work was 5 per cent of the original contract cost of the plant,



or approximately \$8,500. The plant has a capacity of six million gallons in twenty-four hours, which is about three million gallons in excess of the present amount of water consumed in the city daily. It is so constructed that an extension can be made to handle eight million gallons each twenty-four hours. The tower encloses a 50,000 gallon steel tank to hold enough filter wash water for the six filter beds, each of which can handle one million gallons daily. The plant is also equipped with a complete laboratory, where the water will be analyzed daily and given bacteriological examination. Its operating gallery is built with marble operating tables and white enameled brick railing and the floors are of tile.

## STREET LIGHTING AND POWER

### Install Electrolytic Mitigation Systems.

Trenton, N. J.—The Public Service Corporation has agreed to install and maintain an electrolysis mitigation system in this city. This agreement, similar to the one recently entered into by the Trenton & Mercer County Traction Corporation, was negotiated by E. E. Brownell, the electrolysis expert, employed by Trenton. Investigation has proved that escaping electricity from lines of the trolley companies destroy the city water mains and result in constant deterioration, expense and inconvenience. The electrolytic mitigation system is to be under the direction, supervision and control of E. E. Brownell. Mr. Brownell, consulting electrical engineer, is employed to represent the city as consulting electrical engineer for the purpose of supervising, directing and controlling the installation, completion and maintenance of the system and to prepare such surveys as may be necessary for doing such work and the proper maintenance thereof after completion. The employment of Mr. Brownell will be without cost to the city. The city enters into a 25-year contract with the engineer.

### Rate in Franchise Held Not Permanent.

South Glens Falls, N. Y.—The Public Service Commission, Second District, has decided, in the case of the complaint of the trustees of the village of South Glens Falls against the United Gas, Electric Light & Fuel Company of Sandy Hill and Fort Edward, that the company is not restricted in its price for gas to the rate on which its franchise is based. In May the company filed with the commission its tariff increasing its price of gas in the village from \$1.25 to \$1.60 per 1,000 cubic feet. In November the village protested to the commission that the increase was illegal, because the franchise under which the company is operating provides that it shall charge only \$1.25 per 1,000 cubic feet. The villages of Fort Edward and Hudson Falls made similar complaints later, but said they would abide by the decision in the South Glens Falls case. The commission dismisses the complaint, and in its decision says in part:

There is no provision in the transportation corporations law which in any way seems to justify the contention that a municipality has the right to permanently fix in a franchise the rates which a gas or electric light company shall charge in the territory covered by the franchise. There is no statute which in any way fixes the rate to be charged for gas sold in these villages, except as the same is governed by the Public Service Commissions law. In this respect the situation is quite different from that relating to street railroads in which the law specifically provides for a certain rate of fare within the limits of an incorporated city or village, which, however, is subject to modification by the Legislature or by this commission. In the case of the Huntington Railroad Company we decided, November, 1917, that municipalities have no power to prescribe a rate in a franchise which shall always be controlling so as to deprive the state of the power to regulate the fare to be charged by a street railway. This pointed out that the franchise was binding until such time as the state interfered and prescribed a different rate. This applies with equal force to gas and electric light companies. If any increases are made in their rates a complaint may be made against them. If, after investigation, it is determined that the increased rates are unreasonable the commission has the power to revise and reduce them. It also has the power to increase rates provided the company can show that it is not earning a sufficient amount to give it a reasonable return upon the value of the property employed by it in the public service.

Where there is a franchise restriction it is good as between the parties, but is not controlling as against the state when the facts would justify granting the relief but for the condition in the franchise. We are of opinion that the condition in the franchise granted by South Glens Falls is not controlling so as to prevent the commission from authorizing an

increase in that rate in the event that the company can justify such increase on the ground that it is failing to earn a fair return on the value of its property employed in the public service. As the complainants rely entirely on the restriction in the franchise fixing the rate, and do not propose to contest the reasonableness of the increased rate if the matter is decided adversely to them it is our duty to dismiss the complaint.

In the answer filed by the company at the hearing the company contended that the raise in price is made necessary by reason of the fact that during the past five and one-half years the price of coal in the open market has advanced 120 per cent, and the price of coal at contract prices has advanced approximately 74.6 per cent; that the cost of manufacturing labor has advanced during said period 55.5 per cent, and that the taxes assessed against the company during said period have increased 37.6 per cent, resulting in a cost of delivery of gas to the company at the consumer's burner in the villages of \$1.7594 per 1,000; that during each of the last five years and during the first six months of 1917 the cost of furnishing gas in each of said villages has exceeded the company's revenues; that during the first six months of 1917 there was an increased deficit in the company's gas business as compared with a corresponding period in the year 1916 of \$1,174.25.

### New Low Rates for Municipal Electric Plant.

Los Angeles, Cal.—Unanimous approval has been given by the council to the ordinance fixing the rates to be charged by the public service commission for municipal power. The rates include the new industrial power rates, ranging from 1.56 cents a kilowatt hour to 0.76 cents a kilowatt hour. The industrial users also will receive a 20 per cent discount if not more than 10 per cent of their consumption of power is after 4:30 p. m., when the peak load, or period of greatest consumption of electrical energy is in progress, extending until 9:30 p. m. The rate of 1.56 cents a kilowatt hour applies to power in excess of 6,000 kilowatts a month, after which the rate is stepped down to the lowest rates of 0.76 of a cent a kilowatt for all power in excess of 1,500,000 kilowatt hours a month.

## FIRE AND POLICE

### Chicago's Police Chief Not Guilty of Graft.

Chicago, Ill.—Charles C. Healey, former chief of police, has been declared "not guilty" in judge Sabath's court by a jury which for eight weeks listened to the trial of the charge that Healey was a grafter. With the former chief, William R. Skidmore, saloonkeeper and politician, and detective sergeant Stephen Barry, his co-defendants, were also given their liberty. Healey could not overcome his emotion; he wept and his body shook. He embraced his attorneys. Throughout the trial the former chief was very sick and on many days had to be carried into the court room. The indictment and trial was the direct outgrowth of state's attorney Hoyne's investigation of alleged irregularities in the city government during the summer and fall of 1916. The prosecutor issued a number of strong statements concerning corruption in the police department, but it was not until his men raided the Sportsmen's Club of America in connection with the slot machine inquiry that the then chief was named directly as being connected with alleged grafting. The prosecutor caused a raid to be made on the police department offices in the city hall. Documents and vice reports from the office of the second deputy superintendent were seized, and only the massed forces of the city hall, headed by corporation counsel Ettelson, prevented the raiders from carrying away the files of correspondence and police reports from the chief's office. Mayor Thompson took up the cause of his chief, and charges were made that Mr. Hoyne's attack was made for campaign purposes in order to defeat city prosecutor Harry B. Miller, the city hall candidate for state's attorney against Mr. Hoyne. The prosecutor, after his re-election, continued his attacks against the chief and on December 18 the mayor forced Mr. Healey to resign. He retired on January 11. The chief's exit was hurried by the dramatic raid which Hoyne's forces made on the office of Thomas Costello on January 8, and the arrest of Costello, "Mike

de Pike" Heitler, W. R. Skidmore and police lieutenant Augustus Martin White. Nearly \$1,000, said to be graft collections which the four men were splitting, was seized, as well as documents and notations from Costello's desks. This data, according to the prosecutor, proved the men were engaged in a regular business of extorting tribute from gambling houses and resorts, with the connivance of the chief. After nightfall on the same day assistant state's attorneys and detectives from Mr. Hoyne's office gained entrance to the chief's residence under the guise of newspaper reporters and arrested the chief. The telephone wires of the chief's residence, of Costello's office and residence, and the Skidmore saloon had been tapped by the state's attorney's forces. The grand jury indicted Healey, Barry and Skidmore on conspiracy charges. The three men were sent to trial on October 15 before judge Joseph Sabath. Costello, the principal witness, told how the former chief shifted commanding officers from district to district at his request, and sent lesser officers who interfered with protected traffic in vice and gambling to "the woods." He indicated that he had paid the former chief graft money as far back as 1898. He charged that he and Healey had plotted to sell sergeant promotions to patrolmen for \$250 each. Costello named Barry and Skidmore as partners in the profits of the syndicate from resort tribute and gambling house profits, and said both collected money from resort keepers. The defense of the three accused men was conducted individually, but along similar lines. All charged that the case against them was a "frame-up." The former chief denied that he had ever had criminal dealings with any man at any time during his police career. He admitted he had known Costello for some thirty years, but had never held any confidential relations with him. Mr. Healey made denial of all the sixty alleged telephone talks between himself and Costello. His attorneys endeavored to show that their client was the unfortunate victim of the political fight between Hoyne and the mayor. The "star" testimony of Costello was utterly disregarded by the jury, it was declared by a member of it. The jurors did not believe the evidence contained in the tapped wire conversations. The state's witnesses admitted their inability to use shorthand and the attorneys for the defense proved these same witnesses could not write rapidly enough in longhand to have taken down the conversations charged. Furthermore, the state admitted the original notes were lost and altogether the evidence looked thin.

#### City Water and Light Plant Burned.

Marlinton, W. Va.—The building and machinery of the municipal light and water plant has been destroyed by fire. The flames were discovered over the boiler room. Frozen hydrants caused delay in fighting the fire and the plant was almost entirely consumed before a stream of water could be directed on the flames. The water and light plant was located next to a tanning plant, with which connections was made so that water was pumped into mains and furnished the city from the Greenbrier river. The city was left without lights. The plant was purchased by the city last fall.

#### Fight Difficult Fire in Brewery Stable.

Syracuse, N. Y.—Thirty-four horses were burned to death and property estimated in value between \$100,000 and \$150,000 was destroyed by a fire which raged for four hours in the plant of a brewing company. Buildings adjoining the plant, including a storage company's \$80,000 warehouse with contents valued at \$500,000, were saved after a desperate fight. Every piece of apparatus in the fire department and every man on duty was used, at one time or another, on the work. Dwelling houses across the street and west of the brewing plant were showered with sparks for hours, but were protected by a blanket of snow on their roofs. A roof on one of the smaller buildings of the gas works, directly across Onondaga creek from the brewery, caught fire, but was extinguished. The garage contained several tons of wrapping paper and about 1,000 cases of bottles. There were sixteen auto trucks on the lower floor, with two light cars. All of the trucks were

removed by the police and spectators, but the light cars were abandoned because of the smoke. Under the sidewalk in front of the garage is a gasoline tank, holding approximately 200 gallons of gasoline. A pool of water was thrown over the tank. District chief Kantz and five hosemen on the roof of the bottling works had a narrow escape when a sudden gust of wind carried a sheet of flames across the roof behind them, cutting them off from the ladders. They fought it back with streams from their hose until the wind shifted. Such ladders as are carried by the department were inadequate in a situation like that confronting the firemen. None of them could be hoisted so that hose lines could be carried to the garage roof. High tension cables, stretched in front of the garage and adjoining buildings, made it difficult to handle long ladders. A stream from a single line of hose was kept playing over the gas tanks and buildings constantly.

#### Firemen Strike in Attempt to Unionize.

Dallas, Tex.—Approximately 150 of the 176 members of the Dallas city fire department went on strike because of the suspension without a hearing of 21 firemen who refused to withdraw from a newly organized firemen's union which is affiliated with the American Federation of Labor. One hundred and fifty members of the home guard were assigned to duty as firemen at various stations. After a few days the men gradually returned and asked to be reinstated, until within a week all but 25 were at work. Commissioner Winfrey told the men that they would receive the same treatment which had been accorded them previously in the department and that the events of the strike would be forgotten. He explained to the men that hereafter they would not be required to furnish their fire clothing and beds, the city having made arrangements to furnish these. Firemen said that this equipment had heretofore required an initial outlay of more than \$30 each. The commissioner finally granted a hearing to the suspended men.

#### Difficult Fires in New York.

New York, N. Y.—One fireman was killed and several others were injured at a three-alarm fire which burned out a six-story brick theatrical warehouse, causing a loss estimated at \$100,000. While members of engine company Nos. 19 and 54 were dragging hose across the first floor of the building the flooring collapsed, dropping them into the basement. All were rescued, except John W. Kocher, of engine company No. 54. When the floor fell Kocher landed in the basement, some way off from the rest of the men. The fire was discovered by a passerby in the rear of the basement. Police reserves ordered out occupants of the row of tenements on either side. In a public school, back of the warehouse, the children continued their studies after being assured there was no danger. Anxious mothers meanwhile besieged the police in their efforts to get to their children in the school building. Owing to the inflammable character of the stores, the firemen were forced to work from the outside of the building after the first floor collapsed.

All the fire apparatus in the southern part of Manhattan was called to a fire that completely destroyed a six-story loft building and tied up all traffic on an elevated line for about two hours, while firemen poured water on the blaze in a vain attempt to keep it from spreading to other loft buildings in the narrow streets. A few minutes after the first apparatus arrived flames burst on all floors of the adjoining six-story loft building, and the firemen exerted every effort to keep the blaze from spreading from that building. It was the first large fire that the new fire commissioner, Thomas J. Drennan, had come to see, and fire chief Kenlon told him that he had chosen one of the most spectacular fires in several months. In addition to seeing the pulmotors and the rescue squads working to resuscitate five firemen who had been overcome by the smoke, the new commissioner also saw a half-dozen of his firemen work rapidly in a thrilling rescue of two of their fellows who had been trapped on a fire escape at the peak of the burning building. In the rescue about six firemen engaged in a "pick-and-go" rescue, in which they had to place their



ladders three times to reach the fire escape where captain John Norton and Thomas Fox of truck 20 had been trapped while they were making an examination of the condition of the roof of the building. The firemen on the fire escape tried to make their way down when they saw that their position was becoming dangerous, but the flames drove them back. They could not climb to the roof and they could not make their way to the fire escape on the adjoining building. A few minutes after they were rescued the fire escape where the two trapped firemen had been standing broke from its supports in the brick wall and fell to the ground. The damage was about \$400,000.

An antiquated five-story brick building on the Brooklyn water front, used by the government as a bonded warehouse, was partly destroyed by fire with a damage estimated at \$500,000. After an investigation in which more than fifty employees of the warehouse were interviewed, fire marshal Brophy declared there was no indication of incendiarism. He said the blaze started from a plumber's blow torch, which was being used to thaw frozen water pipes. The building is only two blocks from the scene of the Dow Stores fire, which recently did more than \$2,000,000 damage. About the same distance away is pier 22, to which the steamship Napoli is tied up. Two days before a bursting steampipe resulted in an alarm of fire. Firemen, arriving at the pier, discovered the vessel to have a large number of high explosives on board. Mayor Hylan, on learning of this, ordered the bombs removed. Rubber, tea, cocoa and hides, all government property, were stored in the building. Tenants within a block were ordered into the street. The fireboats William J. Gaynor, New Yorker and the Zophar Mills came, but the ice was so thick along the water front that the boats were unable to get near the fire until the Zophar Mills, with her battering ram bows, cut a passageway through the barrier. Thousands of persons hurried to the scene and so great did the crowd become that reserves were called from four police stations. The blaze was fought for about two hours.

#### **Firemen to Rebuild Burned Station.**

Minneapolis, Minn.—Firemen, out of a job, because their station house was burned, will rebuild engine house No. 5, burned New Year's night, according to a statement by chief Ringer. Construction work is already under way. "By using men in the department, many of whom are skilled bricklayers and carpenters, the city can save money in rebuilding the station," Ringer said. "We can replace it in this way at a cost of approximately \$2,000. The plan also will afford employment to the boys thrown out of work because the station burned." The chief's plan was endorsed by the council fire committee. The committee also decided to take 48 firemen out of service March 1. The original number was 55, but seven resignations have cut it to the new figure.

#### **Police Chief Exonerated and Reinstated.**

San Antonio, Tex.—The charges of laxity in enforcing the laws against vice made against chief of police Lancaster have not been sustained and the chief has been reinstated by unanimous vote of the mayor and commissioners. Charges had been brought by a citizens' committee of five which had investigated vice conditions in the city. The chief was accused of failing to cooperate with the military and federal authorities in stamping out vice. At the same time corporation judge J. Ed Wilkins was charged with failure to assess sufficiently heavy fines against persons charged with vicious conduct. Both were suspended pending hearings. As a result of evidence submitted the commissioners found that the charges were not sustained. Mayor Bell, in discussing the case, said: "I want to express my conviction that all of the officers of the law in San Antonio and Bexar County are faithfully and earnestly endeavoring to enforce the law and clean up the city. It must be borne in mind that a most unusual condition has confronted us. The building of the cantonments, with the relatively high wages paid, demoralized the labor market. This brought many strangers to the city. The presence of soldiers from all parts of the country brought many women, and the city has expanded in a few

months from one with a population of 125,000 to one of 225,000 at least. Among the soldiers sent here have been a large number of negroes, yet we have handled this situation without friction. Records show that fully five per cent of the soldiers sent here, including both black and white, were suffering with the so-called social diseases when they were drafted. The government reports now issued show a marked reduction in this condition and demonstrate to any fair-minded man whether the clean-up is actually making headway."

#### **Fatal Fire in Insane Asylum.**

Middletown, Conn.—Two lives were lost, and property estimated in value at from \$250,000 to \$300,000 was destroyed, when fire, starting at 4 a. m., completely gutted the south wing of the main building containing eight wards in the Connecticut Hospital for the Insane, and for a time endangered, not only the entire main building, but also the center cottage located near by. The hospital fire department, with Middletown and Hartford firemen, succeeded in confining the blaze to the south wing. The fire was discovered in an inaccessible part of an attic. Quantities of hospital equipment and other property were saved and placed under guard of the local company of the home guards on the grounds. The patients, most of whom were men, were asleep in the rooms in the building when the fire broke out. That the fire started on the top floor undoubtedly accounted for there being no loss of life.

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## **SEWERAGE AND SANITATION**

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#### **Petition for Return to Aldermanic Rule.**

Superior, Wis.—Voters numbering 1,642 have signified their desire to change from the present commission form of government back to the old form of a mayor and alderman, in a petition filed with the city clerk. The petition asks for a referendum vote on the question, seeking a council of one alderman from each of the ten wards, and a mayor instead of the present board of three commissioners. The petition took four days to assemble, it containing 250 more names than necessary for a vote. The referendum will be put before the citizens at the April election.

#### **Mayor Barred from Practicing Law.**

Seattle, Wash.—Hiram C. Gill, mayor of Seattle, has been barred by the state board of bar examiners from practicing law in the state of Washington for one year. The decision was reached following a hearing of charges that the mayor allowed the law firm of Gill, Hoyt & Frye to use his name in soliciting police court business. Similar sentences were imposed by the board upon Heber B. Hoyt and Hermon S. Frye, the mayor's former partners, who were charged with soliciting legal business in violation of a state law.

#### **Extending Officials' Powers to Those of City Manager.**

Middletown, O.—Middletown will be under a modified city manager form of government during the next year at least, although no such office has been definitely designated. To city clerk John Kunz will fall duties in every way similar to those of an authorized city manager. This change resulted from the report of the committee on rules and regulation of the city commission as follows: "At all times when the city commission is not in session matters relating to the public business shall be referred directly to the clerk of the city commission and by him to the proper committee. Heads of departments shall freely confer with said clerk and file with him complaints or suggestions." The above means a decided change in the management of the city affairs. In the past there has been but one of the five commissioners on each committee and this has created a tendency on the part of each member to hesitate in interfering or making suggestions with regard to any department in charge of a fellow member. According to the new rules there will be three members on each committee, each with power equal to that of his fellow member. In the past the heads of the various parts of the city government, including police, fire department, engineer, street superintendent, etc., have made

reports only when called upon by the commissioner in charge of their individual department. Under the new rules and regulations each of these heads will appear at the regular commission meeting and besides will confer with the clerk upon matters of importance coming under their jurisdiction. They will each be responsible to the three members of the department committee. It is also specified in the new rules that every commissioner must vote upon questions put before the body, unless he can offer sufficient reason to be excused by the commission as a committee of the whole.

Grove City, Pa.—The city council has amended the ordinance which created the position of "managing engineer" so as to change the title to "city superintendent." Edward Thomas has been appointed city superintendent, with duties and functions similar to those usually performed by the city manager.

#### Kenyon Riddle Goes from Abilene to Xenia.

Xenia, O.—At the first meeting of the new city commission, Arthur N. Whalen was made mayor and appointed Kenyon Riddle city manager. Mr. Riddle was engineer and manager of Abilene, Kans., since June, 1913, and was a member of the civil engineering firm of Riddle and Riddle. He is a graduate of the University of Kansas. It was to a large extent due to his efforts that the city manager plan received the necessary legislative sanction in the state. Mr. Riddle is one of the remaining six charter members of the City Managers Association. In his new position he will receive a salary of \$3,000 a year.

#### Bethlehem Looking for a City Manager.

Bethlehem, Pa.—Following a resolution by the city commission, a committee, headed by mayor Johnston, is seeking a business manager for the city. It is probable that the city officials will pool part of their salaries to pay the manager adequately.

#### City Wants Manager.

Ocala, Fla.—The new commission-manager charter is now in effect and the mayor and commissioners are seeking a manager. The city has a population of about 6,000, and the manager will have charge of the public utilities in particular and all administrative departments in general. It is stated that the candidate should be capable of managing the water and light plants and sewer system.

### MISCELLANEOUS

#### Court Upholds City's Bread Law.

Toledo, O.—Toledo's bread ordinance has been upheld by the court of appeals. The ordinance requires all bread to bear a label showing the weight of the loaf, and makes one pound the standard. Under the ordinance no loaf of less than a pound can be sold. On this point the ordinance was held invalid by the common pleas court. The court of appeals reversed the common pleas court, and sustained the police court, which imposed a fine on a baker. The case was carried to the higher courts to test the ordinance, and now will probably be carried to the supreme court. Attorney for the defendant said that the elimination of less than a pound loaf will work a hardship on 80 per cent of the purchasers, who have been accustomed to buying the smaller loaf.

#### Vote for Municipal Fuel and Ice Plants.

Oshkosh, Wis.—Out of a total vote of 2,468 cast at a special election on the question of whether the city should establish a fuel plant, 1,846 citizens voted in the affirmative and 622 in the negative, a three to one vote and a majority of 1,124 for municipal ownership. On the question of whether the city should establish an ice plant the vote was not quite so heavy, the total being 2,303, but the result was decisively in the affirmative. The figures were 1,577 for and 726 against, giving a majority of 851, or a little better than two to one in favor of the proposition. Not one of the thirteen wards returned a majority against either proposition. There was not much of a campaign waged and what little there was resulted from the efforts of mem-

### LEGAL NOTES

#### A Summary and Notes of Recent Decisions— Rulings of Interest to Municipalities

##### Police Power—Billboards.

(Fla.) City ordinance regulating the erection of billboards held not to forbid painting of signs on walls of buildings advertising legitimate business of owner or occupant. Municipality cannot prohibit use of building surface for painting thereon signs or advertisements which are neither lewd, vulgar, nor obscene. Power of municipality to regulate billboards is included in power to abate nuisances, but cannot be exercised to extent of depriving one of legitimate use of his property because it offends the aesthetic sense of others.—*Anderson v. Shackelford*, 76 So. 343.

##### Police Power—Permit to Erect Building.

(Md.) Petitioner for mandamus against mayor and city council of Baltimore to compel issuance of permit to erect building could not obtain permit to erect building for purposes set out in petition, and, after erection, use building for other purposes, without first obtaining mayor's approval.—*City of Baltimore v. Scott*, 101 A. 674.

##### Ordinance Courses—Right to Appeal.

(Mich.) The right of appeal from justices' courts in ordinance cases must find more substantial foundation than former declared legislative policy, though such policy may be of aid in cases of doubtful construction.—*Crary v. Marquette Circuit Judge*, 163 N. W. 905.

##### Permit for Altering Buildings.

(N. Y. Sup.) If express permit for alteration of building into theater in manner other than that provided by Building Code would have been ineffective, acquiescence in such alteration without permission by city authorities would also be ineffective.—*Altschul v. Ludwig*, 166 N. Y. S. 529.

##### Police Power—Building Restriction.

(La.) Ordinance of city of New Orleans which on aesthetic considerations excluded markets from certain districts to preserve them for residential purposes, and interfering with liberty or property rights of citizens, was ultra vires and invalid.—*State ex rel. Blaise v. City of New Orleans*, 76 So. 244.

##### Police Power—Abating Nuisance.

(Ala.) City has right under general police power to abate continuous nuisance, although its ordinance in reference thereto be invalid, where due notice of intention to abate is given owner.—*City of Birmingham v. Graves*, 76 So. 395.

##### Police Power—Refusal of Building Permit.

(S. D.) City commissioners cannot arbitrarily refuse building permit to one who has complied, or plans to comply, with all laws and ordinances of city in respect to building operations.—*City of Mobridge v. Brown*, 164 N. W. 94.

bers of the Oshkosh Trades and Labor council, which was instrumental in circulating the petition that caused the special election to be held. No excitement attended the election and there was little apparent public interest in its outcome. According to the ordinances: "There shall be established as soon as possible in and by the city a municipal plant or depot for the purchase, sale and supplying to the citizens of fuel at cost," and "a municipal plant and ice house for the harvesting, storing and supplying to the citizens of ice at cost." The plant and depot are to be operated and managed pursuant to regulations to be adopted by the council, and \$25,000 has been authorized for each project, to be raised either by direct taxation or by the issue of bonds in the discretion of the council. One wood and coal company has already offered to sell to the city the "entire business, including real estate, equipment, etc., the price to be fixed by an appraisal."



## NEWS OF THE SOCIETIES

### CALENDAR OF MEETINGS.

**Jan. 30-Feb. 1.**—OHIO WAR ROADS CONVENTION, Columbus, O. Ohio Good Roads Federation, Ohio Engineering Society and County Commissioners' Association. Chairman, committee on arrangements, state highway commissioner Clinton Cowen.

**Feb. 4.**—OREGON SOCIETY OF ENGINEERS. Annual meeting, Portland, Ore. Secretary, Orrin S. Stanley.

**Feb. 4-7.**—AMERICAN ROAD BUILDERS' ASSOCIATION. Fifteenth annual convention, Hotel Statler, St. Louis, Mo. Secretary, E. L. Powers, 150 Nassau street, New York City.

**Feb. 7-9.**—AMERICAN CONCRETE INSTITUTE. Annual convention, La Salle Hotel, Chicago, Ill. Secretary, H. B. Alvord, 27 School street, Boston, Mass.

**Feb. 8-9.**—AMERICAN CONCRETE PIPE ASSOCIATION. Annual convention, Sherman Hotel, Chicago, Ill. Secretary, J. H. Libberton, 208 S. LaSalle street, Chicago.

**Feb. 15.**—NEW JERSEY SEWAGE WORKS ASSOCIATION. Annual meeting, State House, Trenton, N. J. Secretary-treasurer, Frederick T. Parker, Guarantee Trust Bldg., Atlantic City, N. J.

**Feb. 20.**—CAROLINA ASSOCIATION OF HIGHWAY ENGINEERS. First meeting, Chapel Hill, N. C. Secretary, N. S. Mullican, county highway engineer, Lexington, N. C.

**Feb. 22.**—MINNESOTA JOINT ENGINEERING BOARD. Annual meeting, Duluth, Minn.

**Feb. 22.**—MINNESOTA SURVEYORS' AND ENGINEERS' SOCIETY. Annual convention, Duluth, Minn.

**March 17-24.**—PAN-AMERICAN CONGRESS ON CHILD WELFARE, Montevideo, Uruguay. Secretary, Edward N. Clopper, 105 East 22d street, New York, N. Y.

**April 15-17.**—UNITED STATES GOOD ROADS ASSOCIATION. Annual convention, Little Rock, Ark. Secretary, J. A. Rountree, 1021 Brown-Marx Bldg., Birmingham, Ala.

**April 18-19.**—BANKHEAD NATIONAL HIGHWAY ASSOCIATION. Annual meeting, Little Rock, Ark. Secretary, J. A. Rountree, 1021 Brown-Marx Bldg., Birmingham, Ala.

### American Society of Civil Engineers.

The annual meeting which was to have been held last June, but was abandoned, was held at the United Engineering Societies' building, New York City, January 16. The proposed revision of the constitution was taken up, but was referred to the members through a letter ballot.

Prof. Arthur Newell Talbot, professor of municipal and sanitary engineering, and in charge of theoretical and applied mechanics, University of Illinois, was elected president of the society for the ensuing year. Professor Talbot was born in 1859, was graduated from the University of Illinois in 1881, was engaged in railroad work until 1885, and in 1890 was appointed to his present position. Laboratory research in the strength of materials was instituted at the university in 1890 under Prof. Talbot's direction and studies were made of built-up iron and steel members, brick and terra cotta columns, timber, paving brick and reinforced concrete. Prof. Talbot has also developed the hydraulic laboratory of the university. He is an authority on railroad engineering problems. He was president of the American Society for Testing Materials in 1913-14, and

has been president of the Society for the Promotion of Engineering Education and the Illinois Society of Engineers, and vice-president of the National Association of Cement Users. He is a director of the American Railway Engineering Association and a member of the Western Society of Engineers, the American Water Works Association and the American Society of Municipal Improvements.

George H. Pegram, retiring president, delivered his presidential address.

The secretary reported a membership on January 1 of 8,590, a net gain of 398. About a thousand members are now in service.

George W. Tillson presented a final report of the committee on materials for road construction. He declared that road work was still in an experimental stage and that the report would soon be out of date. L. D. Rights presented a final report of the committee on steel columns and struts.

Other officers elected were: Vice-presidents, John F. Coleman and Nelson P. Lewis; treasurer, George W. Tillson. Directors were elected as follows: District 1, George W. Goethals and A. M. Hunt; District 4, Samuel T. Wagner; District 9, E. E. Wall; District 10, Milo S. Ketchum, and District 11, Harry Hawgood.

### Ohio War Roads Convention.

Three state organizations, all concerned with highway problems, will merge their activities this year in the Ohio war roads convention in Columbus, January 30 and 31 and February 1.

The trio of associations are the Ohio Good Roads Federation, the Ohio Engineering Society and the County Commissioners' Association. Cooperating with all is the State Highway Department.

The arrangements are under the direction of a committee with state highway commissioner Clinton Cowen as chairman, assisted by president D. S. Humphrey and secretary Walter A. Alsdorf, of the Ohio Good Roads Federation; president A. R. Taylor and secretary John Laylin, of the Ohio Engineering Society, and president C. M. Hunt and secretary Richard Sinclair of the County Commissioners' Association. The triple convention has the endorsement of Governor Cox.

Primarily, the conference will consider ways and means of promotion of war roads in Ohio.

### New Jersey Sewage Works Association.

The next annual meeting of the New Jersey Sewage Works Association will be held at the State House at Trenton February 15.

The interesting program which has been arranged will include the following papers: "The Operation of Small Sewage Disposal Plants," by George W. Fuller, New York City; "The Difficulties Experienced and Overcome in the Operation of the Madison-Chatham Plant," by Paul Molitor, Chatham, N. J.; "The Operation Land Filters at Newton Under Winter Conditions," by Morford G. Smith, Newton, N. J., and "Sewage Disposal Plant Operation in England," by Joshua Jamison, East Rutherford, N. J.

The president of the association is John R. Downs, Bound Brook; the

(Continued on page 86)

## PROBLEMS CITIES ARE STUDYING WITH EXPERTS

**STREET IMPROVEMENTS** are to be made by New Berlin, O. The engineering firm of Guily & Rice is preparing new estimates on the work.

A **HIGHWAY BRIDGE** to cost \$220,000 is to be built by Bridgeport, Conn. The engineers to prepare plans for the structure are the Strauss Bascule Bridge Company.

Sharp County, Evening Shade, Ark., is to construct about twenty miles of gravel **ROADS**. Plans for the work were prepared by the Parkes Engineering Company.

Leon, Kans., is to build an **ELECTRIC LIGHT PLANT**. Preliminary plans for the improvement have been prepared by the engineers, W. B. Rollins & Company.

Riverside, Ill., is to make extensive improvements, including **PAVEMENTS, SEWERS and WATER MAINS**. The engineer for the work is C. N. Roberts.

Gilmore City, Ia., contemplates the construction of a **SANITARY SEWER SYSTEM**. Surveys on the improvements are being made by C. H. Currie.

Holbrook, Ariz., is contemplating the improvement of its **WATER SYSTEM**. The city has retained the engineering firm of Olmsted & Gillelen to prepare plans.

Two reinforced **CONCRETE DAMS** are to be built by Neodesha, Kan. The preliminary plans for the work have been drawn by the engineers, Black & Veatch.

Galena, Kans., is to improve its **WATERWORKS**, plans and specifications for the work having been completed by Burns & McDonnell.

Toledo, O., is to make extensive improvements to its **SEWERAGE SYSTEM** and to build two **SEWAGE PUMPING PLANTS**. The city has retained as consulting engineers the firm of Hoad & Decker.

## INDUSTRIAL NEWS

**Cast Iron Pipe.**—Prices remain constant. Quotations: Chicago, 4-inch, class B and heavier, \$57.30; 6-inch, \$54.30. New York, 4-inch, class B and heavier, \$58.35; 6-inch, \$55.35; 3-inch, \$65.35. Birmingham, 4-inch, class B and heavier, \$52; 6-inch, \$49; class A \$1 extra.

### Highway Industries Association.

The Highway Industries Association, which was formed at a meeting in Detroit last month, held a final organization meeting at the Congress hotel, in Chicago, on January 21. Before the meeting there were conferences with the Office of Public Roads, Washington, and with the highway transport committee of the Council of National Defense, and with representatives of the executive committee of the American Association of State Highway Officials.

The purposes of the meeting is to cooperate with all government agencies, both national and state: In the coordination of the highways with other transportation agencies of the country; in encouraging development of highways that will advance the economic life of the nation, and in stimulating their use in such manner as to facilitate and cheapen the transportation of food, raw materials and finished products, to the end that our highways may be of maximum service in the transportation system of the nation.

S. M. Williams, Lima, Ohio, is chairman, and S. T. Henry, Washington, secretary. The committee on organization is as follows:

Publications, E. J. Mehren, editor, Engineering News-Record, New York; cement, George S. Bartlett, Portland Cement Association, Chicago; brick, W. P. Blair, secretary, National Paving Brick Manufacturers' Association, Engineers' building, Cleveland, Ohio.; sand and gravel, E. Guy Sutton, secretary, National Association Sand and Gravel, Williamsport, Ind.; stone and slag, A. P. Sandles, Ohio Macadam Association, Columbus, Ohio; bituminous materials, Philip P. Sharples, Barrett Manufacturing Company, New York, N. Y.; road machinery, W. T. Beatty, president, National Road Builders' Machinery Manufacturers' Association, Chicago; rubber tires, R.

J. Firestone, vice-president, Firestone Tire and Rubber Company, Akron, Ohio; motor car accessories, C. W. Stiger, president, Motor and Accessory Manufacturers, Chicago; motor cars, W. P. Chrysler, general manager, the General Motors Corporation, Flint, Mich.; motor trucks, S. M. Williams, Garford Motor Truck Company, Lima, Ohio.

**The United States Asphalt Refining Co.,** New York, N. Y., announces that C. B. Filbert, representative of the company, and also of the **Bitoslag Paving Co.,** in the state of Pennsylvania, has been commissioned captain in the Engineers Corps, National Army, and will be in the road building branch of this service.

**The Goodyear Tire & Rubber Co.,** Akron, O., announces the following changes in branch managers: P. A. Kerns, formerly manager at Butte, Mont., has been made manager at Buffalo, N. Y.; W. J. Peete, who has been handling government business at Washington, succeeds Mr. Kerns at Butte; F. L. Morgan has been promoted from assistant manager at Philadelphia to manager of the Cleveland branch, succeeding F. N. Hammond; R. J. Davies, formerly city salesman at Jacksonville, Fla., is now manager of the Nashville, Tenn., branch, succeeding E. H. Morris, who has entered the federal service.

### Changes Building Mixer to Grouter.

Contractor George Czerwinski, Milwaukee, Wis., had considerable grouting to do, but his equipment did not include a grouter. He did have a Rex 4-S building, concrete mixer. The accompanying photograph shows how this contractor fixed up the Rex for grouting. He simply put the wheels on another pair of axles, set parallel with the drum, then he set the Rex concrete mixer, with its axle ends resting on the new axles. This turned the mixer 90 degrees and made it end loading. He then wired on a sheet metal discharge chute. This converted machine did excellent work on a Milwaukee paving job. When Czerwinski finished this grouting job he took off the extra set of axles and put the wheels on the stationary axles and pulled the mixer alongside a building

about a mile away, where he had considerable reinforced concrete to place. The whole operation of changing this machine back to a low charging mixer he accomplished in a few minutes. The Rex mixer is made by the **Chain Belt Co.,** Milwaukee, Wis.

## NEWS OF THE SOCIETIES

(Continued from page 85)

vice-presidents are Paul Molitor, Chatham, and I. Z. Collings, Collingwood, and the secretary-treasurer is Frederick T. Parker, Atlantic City.

### Minnesota Joint Engineering Board.

The annual meeting of the Minnesota Joint Engineering Board is to be held Feb. 22 at Duluth. According to its constitution, the board holds one meeting a year in which all the affiliated societies take part. The Minnesota Surveyors' and Engineers' Society is to hold its meeting at the same time and the Duluth local organization of members of the American Society of Civil Engineers will have charge of the entertainment features of the meetings.

## PERSONALS

Bennett, Frank F., formerly city fire marshal of Dallas, Tex., has been appointed fire inspector by the state fire insurance commission.

Boone, Charles, has been appointed city engineer of Greenfield, Ind., for four years. He is serving his second year as surveyor and county engineer of Hancock County, Ind.

Griffiths, W. A., has been appointed county engineer of Lee County, Ia., to succeed Adrian P. Meyer, resigned.

Hoover, E. M., has been appointed commissioner of streets of Boise, Idaho, to fill the unexpired term of Thomas Finegan, who died recently.

Kennedy, T. H., has resigned as fire chief of Billings, Mont.

Morse, H. S., has been appointed director of public service of Akron, O. He was since 1916 engineer of the Bureau of Municipal Research, Detroit, Mich.

Smith, E. Potter, is new police chief of Montgomery, Ala.

Smith, Frank W., formerly police inspector, has been appointed chief of police of Cleveland, O., following the resignation of William S. Rowe.

Younce, W. L., has been reappointed general superintendent of the city water and light plant, New Castle, Ind., in recognition by the council of his efficient management of the plant since 1914.

Colby, Elmer E., state highway commissioner of Oklahoma, died recently at Chickasha. He was a member of the American Society of Civil Engineers, and as government engineer laid out many towns in the state. He was at one time county engineer of Greene County, Mo., and president of the Oklahoma Society of Civil Engineers.



REX  
BUILDING  
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WORK.